The Builder.

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SATURDAY, SEPTEMBER 30, 1848.

ON Monday morning, in last week, we left England to visit the stone quarries of Caen, determined to see and judge of them for ourselves, and to spare no pains in obtaining ample and correct information on a subject which is of considerable consequence to the English public, and is felt to be so by a large number of persons. We were accompanied by Mr. Charles H. Smith, one of the commissioners appointed to decide on the stone to be used for the outside of the New Houses of Parliament, whose knowledge of the subject is well known, and who has entered warmly into the inquiry with us.

Circumstances led us to enter France by crossing from Folkestone to Boulogne, although, as our readers are aware, this is by no means so near a road to the object of our inquiry as by passing from Southampton to Havre, whence a steam-boat once every day takes merchandise and passengers to Caen in about four hours, crossing the *embouchure* of the Seine, and traversing the river Orne, on which this ancient and interesting town is situated. As it happened, we were thrown into the midst of the late fraternising *fête* at Boulogne, where trumpets, tricolors, and triumphal arches superabounded. We might add another word, beginning with t (and that not *taste*); but the intention seemed good, and all the feeling exhibited was kindly, and we therefore avoid comment on the execution. The amazing extent of the decorations (such as they were), shewed the earnestness with which the people had entered into the demonstration, and invested it with something like dignity.

The new church of *Notre Dame de Boulogne*, now building, forms a very prominent feature, rising high above the town, and will surprise, when approached, by its great height and extent, if it should not charm by its beauty or good taste. The plan is a Latin cross, the style Italian, and at the junction of the nave and transept rises a circular structure of great height and size, to be surmounted by a dome. The upper part of this tower, forming the tambour of the dome, is in three stories. The middle story has a continued series of columns around it supporting an entablature, the frieze of which is formed into flat segmental arches springing from column to column! The top story has a range of coupled columns of smaller size. The soffit of the segmental arches, the upper entablature, and other parts, present Latin inscriptions. The nave and transepts are not roofed in, and have been standing so for some time; the lady chapel is completed, and used for service. This building has a priest-architect, if we were rightly informed, namely, the director of the college, and is proceeded with gradually as funds are obtained, thus resembling in two respects the churches of the middle ages. We must not carry the comparison further, however, for beyond the strong faith and expansive views which could prompt the commencement of such an enormous and costly pile, with small immediate resources, there is little to praise; and we are forced to regret the evident want of artistic direction. It is a grand intention miserably marred.

On the site of the church there is an ancient crypt of extraordinary extent and complexity, for which a very early date is claimed, and probably with justice. It has been so shamefully disfigured, however, by its present conservators, by modern colourings, "decorations," transparencies, &c., apparently for the purpose of making it better worth to the vulgar the *franc* which is charged for viewing it, that much of its interest is lost, and the walk through it filled us with indignation instead of pleasure.

At Abbeville we were glad to find the masons at work, although only to a small extent, on the cathedral. It is almost too late in the day to tell our readers of the great beauty of the west front of this building. It is perfectly marvellous, and should not be passed by any who have not seen it, and are journeying on the rail to Paris. The station is at some little distance from Abbeville, and leaves the moats and drawbridges of the town inviolate; but a diligence meets the train to take passengers on. A building such as this cathedral is a sheet anchor, the preservation of which should be regarded as of the utmost importance by the town. "While the Coliseum stands Rome shall stand;" and the same may be said of some other buildings and some other places.

The comforts which attend the "iron horse," rapidity and ample space, increase the impatience and fastidiousness of travellers under other circumstances. Nine hours spent in a small diligence between Abbeville and Rouen were hard to endure, but ultimately, like all sublunary things, including up to this time "perpetual motions" of every description, did come to an end, and were almost paid for by the magnificent view which is presented by Rouen, the most picturesque of French towns, when it first opens on the traveller. The iron spire placed on the tower of the cathedral (wanting but the apex), is a black spot in the prospect, and greatly disfigures the edifice. It is, nevertheless, a very extraordinary work, and this is made strikingly obvious by visiting a yard attached to the cathedral, and learning that an enormous mass of ironwork there built up, bolted, and braced, and rivetted together, is to be raised and form what you considered was a mere finial wanting to complete the spire. When finished, the top of it will be about 480 ft. from the ground.

The process of restoration is going on to a great extent in Rouen, though checked by the late disastrous political convulsions. At the west front of the cathedral two enriched buttresses of large size have been put up "in block," as is the practice in France, and are ready for the sculptors. At St. Ouen, the neighbouring and rival church, the whole west front is being restored and two new towers added, under the direction of M. Gregoire, the town architect. It is all up in block, and the two spires have been sculptured and made perfect down to the top of the towers.* There are advantages about this mode of proceeding, but the extra cost (amongst other things), which attends working stone in its place rather than in the shed, has prevented the adoption of it in England.

The interior of St. Ouen is full of beauties, and would afford us the easy enjoyment of a long description, if such were our present purpose.* The stone used appears to be the oolite from *Caumont, Seine Inférieure*, which contains flints in great abundance, and these in many cases are left in unworked, and project across mouldings very singularly, inducing a feeling of astonishment, that amidst so much that is beautiful, such eyesores should have been permitted to remain. The joints of the stone work are large.

The south porch, seldom seen by visitors, displays pendent arches springing from carved bosses, and is as remarkable for skilful construction as for beauty in design. The rose windows in this church are very fine: that in the north transept is said to have been executed by the apprentice of the master mason employed (who had himself worked the window in the opposite transept), and to have led to his murder by his master through envy. A similar unlikely story is told, as our readers will probably remember, of the "apprentice pillar," in Roslin Chapel, near Edinburgh. The centre of this northern window at St. Ouen is almost wholly occupied by the mystic combination of triangles (in continuous line), known as the *pentalpha*, of very large size, which was so favourite a symbol with the mediæval architects, and is to be found all over Europe.

At the church of St. Maclou, masons are at work on the entrance front: some of the flying buttresses and pinnacles have been restored. The lower part of this front is an elaborate mass of sculpture, and is in a fair condition. The stone appears to be the oolite last mentioned, and contains flints in great abundance. The curiously sculptured stone staircase in this church which leads to the organ gallery is of the same stone, and is similarly spotted and disfigured by flints.

This staircase (dating from the end of the 15th or beginning of 16th century), together with a staircase in the cathedral of the same city (ascribed to the year 1460), is well deserving study. The license which the gothic architects allowed themselves, with the right of adaptation to wants and circumstances, were much greater than is permitted to modern architects, in any case where they cannot shew that the one particular license in question was taken by some ancient predecessor.

What we have said already will shew that the restorers have been busy in Rouen, but one of the largest works in progress yet remains to be mentioned, and that is the very interesting *Palais de Justice*, where a very considerable sum of money has been expended. This edifice is a very elaborate specimen of the last period of pointed architecture, with lofty roofs, buttresses, and pinnacles, highly enriched gables, and projecting turrets. It forms three sides of a court-yard, and not only has the whole of the old work been restored (and for the most part fairly done), but one of the three sides, consisting of modern discordant buildings, has been taken down and rebuilt in accordance with the original structure. The opposite side contains the *Salle des Procureurs*, a hall 135 feet long and 57 feet broad. The very extraordinary panelled wood ceiling of the *Cour d'Assises* in the central portion of the palace, was illustrated in THE BUILDER some time since.† Since the establishment of the republic, the works have been stopped for want of money.

* The towers do not appear to be in accordance with the original intention.

* This church, with the majority of the other buildings to which we shall have occasion to allude, are illustrated in Pugin and Britton's "Specimens of the Architectural Antiquities of Normandy."

† Vol. IV. p. 474.

There are many elaborately sculptured stone fronted houses in Rouen, which should afford hints to architectural travellers, and no new work is to be seen either here or in other French towns, without at all events an attempt at decoration. The country houses around display considerable variety in the arrangement of the roofs, disposition of adjunctive buildings, and in the dressings of doors and windows. While the English visitor notes the taste and ingenuity thus displayed, he will not fail also to observe a slovenliness, want of finish, and inattention to drainage, paving, and the condition of the streets, which are quite surprising, and which must tend to neutralize, in a sanitary point of view, the advantage the people have in their public promenades, and numerous open *places* for ventilation and exercise. No English community, however small, would suffer their streets to remain in the filthy condition in which those of such important towns as Rouen and Havre are.

At the last-named place, Havre, a building of considerable pretensions has been lately erected for the purposes of a public museum and library, from the designs of M. Debene, the architect to the town previous to the revolution. It is a square building, about 100 feet in front, and about 120 feet in depth; Italian in design, and wholly of Caen stone, from Messrs. Luard and Beedham's quarries. It is in two stories, Ionic and Corinthian, with columns at intervals, and has a central third story for a clock. Stone figures of Painting, History, Science, and Sculpture, surmount the balustrade of the front on either side of the clock-story already mentioned.

The internal arrangement of the building is exceedingly meritorious. It consists of a central hall (appropriated to sculpture), divided into three parts by two ranges of four columns, supporting an enriched panelled ceiling. On either side of this hall, and separated from it by an open arcade, by means of which the hall is lighted, is a gallery used as a museum, the floor of which is 6 or 8 feet above the floor of the hall, so as to afford rooms for the attendants, &c. beneath. Access to these galleries is had from the hall by a flight of steps on each side of the entrance in front. A long flight of steps from the centre of the back of the hall, with other flights right and left, conduct to a spacious picture-gallery over the hall, and a library, containing 22,000 volumes, over the side galleries.

The collection of pictures is large, and contains some good works; many of them, we were informed, belong to an Irish gentleman resident in Paris, and are lent to the town for a certain number of years. The cost of the building, exclusive of fittings, was, according to the attendant, 40,000*l.*

Various works are going on in the repair of the quays and docks, and in the erection of some large warehouses and depôts, which will afford us illustrations when we come to speak of the stone of Caen and its neighbourhood.

Our readers have so recently had a notice of the principal buildings in Caen from the pen of Mr. Donaldson,* that we must be careful to avoid repetition. These structures are unquestionably of the greatest interest and value, and should be visited by all who are studying the history of architecture. The two large churches built by William the Conqueror and Queen Matilda are especially important, in consequence of the certainty of our knowledge in respect of the date of their erection. They are incontrovertible records of the state of architecture in Normandy towards the close of the eleventh century, and serve satisfactorily to disprove the statement made by French antiquaries, that pointed architecture, *as a style*, was practised in Normandy in that same century.

We visited Caen eight or nine years ago, and laid before the Society of Antiquaries some notes and sketches illustrative of the state and appearance of the buildings examined, in the shape of a series of letters to Sir Henry Ellis. Referring to these,* we find it mentioned that various repairs had been going on at Matilda's Church, dedicated to the Trinity, but were suspended in consequence of the want of money. It is to be hoped, we remarked, that efforts will be made not merely to complete the necessary re-instatements, but to remove an absurd balustrade, cornice, and consoles, of modern French taste, which at this time disfigure the upper part of the two western towers. They present the same want of propriety and accordance with the remainder of the composition, as would a modern cap and ribbons on the head of a skin-clad aboriginal.

Suspended, however, the works still are: the doorways (restored) are boarded up, and the westernmost part of the nave is divided off from the part of the church which is in use. The interior of this building possesses an elegance and grace peculiarly its own, and which appear really marvellous, when the ponderous nature of the style is duly considered. The original semi-circular absis that remains is exceedingly interesting, and, as well as all the details, will amply pay for a careful examination: some of the capitals of the columns in the clerestory are peculiarly Byzantine in character. A crypt beneath the absis (delineated in Pugin's "Normandy"), contains sixteen columns unattached, besides others against the walls, disposed so as to divide it into five aisles. The columns, about 4 feet 6 inches apart, are 11 inches in diameter and about 8 feet 6 inches in height, including the cap and base; the cap itself is about 1 foot 9 inches high. These columns have a very Roman appearance.

The old part of the west front of the church is much rent by the failure of the foundation; indeed, there is scarcely a building in Caen of any size which is without a settlement, from the same cause. The stone used is, nevertheless, in a singularly good state, and appears to be of the same formation as that of the quarries now in use. Why this should endure so well, while much from the present quarries has decayed in a few years, we may probably see as we advance in the inquiry.†

At *St. Etienne*, the Conqueror's Church, the morning chapel, at the west end of the north aisle, is being restored, under M. Guy, architect. The new masonry would not satisfy a London practitioner. The interior of the church appears to have been scraped, and is in an exceedingly good condition.

The interior of this church is remarkable for an effect of severe dignity that is truly beautiful,—amply compensating thereby for the lack of ornament which is apparent. In the nave and transept, the semi-circular arch everywhere obtains: in the choir, which is later in style, the *pointed* arch prevails, and tends somewhat to disturb the harmony that elsewhere reigns throughout. Documentary evidence seems to shew, that this latter portion of the church, namely the choir, was erected in the fourteenth century: reasoning from analogy, one would not give to it so late a date by at least a hundred years. The twisted cable and chevron or zig-zag moulding, are observable in all parts of it; and in the triforium are seen semi-circular arches, inclosing pairs of pointed-headed openings. The triforium around the whole of the building, it may be mentioned incidentally, is exceedingly spacious, and would afford accommodation, as was its original purpose, for a great number of persons. It is covered with a simple vaulting, rather more than a quarter of a circle in span, strengthened by plain horizontal bands at certain distances. On the groined roof of the transept are some slight remains of ornamental painting of red colour.

At the west end of the nave, an organ on a mongrel screen of Roman-Doric columns, bearing arches, has been introduced. This mode of disfiguring the productions of the artists of the middle ages, and thus of displaying contempt of them, which was so common in England until within the last fifty years, was not confined, unfortunately, to any one country. Happily such a different spirit now prevails with regard to the works of our forefathers, both here and in France,—a knowledge of architectural history, and feeling for architectural consistency (although still sadly limited), are so much more general than they were,—that no person would now think of attempting so gross a violation of taste and propriety; still less would such an outrage be quietly permitted by the public at large.

Externally much of the stone of the Norman portion, now nearly 800 years old, is in good condition. There are, as usual, settlements. The joints of the old masonry are very large (an inch, and in some places an inch and a-half, in thickness), quite as rude as any of those portions of Gloucester Cathedral, Worcester Cathedral, &c., which some ascribe to the Saxons. St. Etienne, it is to be regretted, is more enclosed by buildings than it was when we were there before.

The church of St. Nicholas, near the last-mentioned edifice, is a very perfect relic of Norman skill. The stones of which the church is built are about 12 inches by 10 inches, and the sand used for the mortar was unsifted, so that the joints are large. St. Nicholas has three absides,—one at the east end of the choir, and one at the east side of both north and south transept. It is to be regretted that this interesting building, which has perhaps suffered less change, and is more homogeneous than any other edifice in Caen of the same date (11th century), is still used for most unworthy purposes: it is divided by a wooden floor into two stories, of which the lowermost is occupied as stables, and the other as a granary. It may be remarked, that a resemblance, in several respects, to the architecture of the lower Greek Empire, may be traced in this edifice — a circumstance not wholly unimportant in the investigation of the history of the architecture of the middle ages.

With a few additional observations on the buildings of Caen, we shall next week lead our readers into the quarries, and place before them such practical information concerning the stone as we have with some pains gathered.

Lanercost Abbey is to be repaired by the Woods and Forests. The local papers state that the works will be commenced immediately, and that Mr. Salvin is the architect employed.

* See p. 52, *ante*.

* "Ancient Architectural Remains in Lower Normandy." By George Godwin, Architect, F.R.S.

† The church of the Trinity, and most of the other churches in Caen, stand nearly east and west. St. Pierre, celebrated for its beautiful spire and tower, stands north and south.

THE VALUE OF ANCIENT ART.

SIR,—I have read with considerable pleasure in THE BUILDER some letters animated with a philosophical spirit, "On the Influences which tend to retard the Progress of the Fine Arts" in this country. While I agree with the ingenious author in much that he puts forward, there are arguments employed in Mr. Cave Thomas's last letter which I am loth to see promulgated to the public through the medium of your excellent and widely-extended journal, without some notice and reply. I allude more especially to the war which he wages against the ancient school of painting. "When we reflect," he writes, "how many thousands of pounds have been spent within these last few months on old paintings, and the length of time it takes under the ordinary patronage of modern art to disburse an equal amount, we cannot but deprecate, to the utmost extent in our power, this most unpatriotic procedure."

Now, Sir, I am one of those old-fashioned individuals who think that money alone will not create a taste for the fine arts; and, with all respect for political economy in its proper sphere, venture to doubt whether there may not be exceptions, in the fine arts at least, to that fundamental maxim, that the best article will always fetch the best price. Undoubtedly it were to be wished that it were so; but it has been my lot of late years to observe, too frequently, alas, impure and meretricious art cockered up by unfair means and exaggerated praises into public esteem, while the unpretending merit of those who affect a higher style of art is often neglected and spurned. Want of patronage I cannot think is any evil at the present day: what all would desire is, that the patronage should flow in the purest stream and in the right direction.

It is in this respect that the study of the history of art is valuable. Like all other histories, if hastily read, as a mere array of facts, it serves but little purpose. To read the history, we should study the principles of art; and in passing through each successive age, the impartial student of enlightened mind will find inexhaustible instruction in observing how the paintings of each generation, "*oculis subjecta fidelibus*," embody, as it were, "the very age and spirit of the time;" a lasting memorial of the inner life of the painter, and an invaluable supplement to the literature of the day.

"The founders of modern art," observes Mr. Cave Thomas, by which expression I apprehend he alludes to the authors of the great Christian revival of art in Italy in the fourteenth, fifteenth, and sixteenth centuries, "shunned not to appear simple, artless, and dry before the exalted ancients, nor to nourish art in the unapparent bud until the time of grace arrived. Whence comes it that we still behold the works of those ancient masters, from Giotto to the teachers of Raffaelle, with a kind of worship and even partiality, if not because the faithfulness of their endeavour, the grand seriousness of their quiet and voluntary confinedness, receives from us esteem and wonder?" "To know the principle thoroughly on which the ancient painters worked would certainly, if acted upon, produce works of equal merit, as it is the great feature of a principle that it may be applied in a great variety of ways, and renders no necessity for copying," that is, we presume, "copying unnecessary." Now, this is fine writing, and well said, but for a gentleman who starts by saying that he has intrenched himself against antiquity, the admissions he makes are serious.

1st. That there are in the works of the ancient school of Italy (to which I confine my argument for the moment) a faithfulness of endeavour, and a serious, quiet, modest self-confidence, which excite in us esteem and admiration.

2nd. That a knowledge of the principle on which the ancients worked would produce, if acted upon, works of equal excellence.

It has been my lot to live with, and be upon intimate terms with some of the most enlightened and amiable patrons of modern art; but I have observed amongst them, that in exact proportion as their wish to forward the interests of the artist at the present day warmed and became active, so did their admiration of the ancient masters increase. In some cases I have witnessed a preference for this or that particular school (as the early Italian), and a desire to impregnate, as it were, the art of the present day with the virtues of that style. In other minds, equally enlightened, I have found a more catholic love for ancient art, which would fain cull from each school those particular excellences most easily adapted to the time and circumstances of the society in which we now live. Both these tempers of mind are excellent, but the latter is, perhaps, the most practically useful, as the former is the most enthusiastic. There are few, however, who love art—I mean high art—in any degree, who have not a deep veneration for antiquity.

The value of the ancient masters consists least of all (and this Mr. Cave Thomas seems to have apprehended) in their execution. As mere manipulators, we are, in many respects, their equals, and in some their superiors; but it is in the conception of their subjects, and in the grandeur of their general treatment, that the artists of Italy (especially) excelled us. Mr. Burke, remarks Mr. Cave Thomas, said that "art can never give the rules that make an art." Undoubtedly, the study of mere pictures, without the study of the book of nature, is an empty task, and it scarcely needed the genius of Burke to enforce so clear a truism; but the question really is, whether the study of pictures does not enable to see and perceive many things in nature which would escape an ordinary observer. For instance, whether in walking through a sylvan glade, we are not involuntarily reminded of a favourite bit by Gainsborough; or whether, at the sight of a golden sky, the mind does not recal the image of some masterpiece (I speak at a venture) of Claude or of Turner. Rely upon it, Sir, it is no mean privilege to see nature with the eyes of those gifted men who have been our predecessors, and to say, with humble spirit, they have laboured, but we have entered into the fruits of their labours. Of all the masters on whose works large sums are expended by the modern connoisseur, none strike me personally as more unworthy of a minute attention than those of Hobbima, and yet I was very much pleased to hear the remark of an acute friend and thorough lover both of nature and art, in society, a few days ago:—"Sir, I never knew Hobbima till I travelled in North Holland, and now I like him, because he reminds me of many pleasant weeks spent there." This was conclusive proof that even Hobbima had great merit.

Burke, Sir, has been quoted; but I fear that practice is better than precept. It is one of the noblest instances of enlightened and generous patronage on record, that that great man—and no less amiable than he was great—at much privation to himself, and during a period when his own circumstances were very straitened, maintained (in conjunction with his brother Richard) Barry, the painter, at Rome, at their sole expense, in order that he might have the inestimable advantage of studying the works of the great masters. No man felt the necessity of this more than Mr. Burke. Speaking of Barrett he says (Life by Prior, p. 207), "He does not get forward so much as his genius would entitle him to do, as he is so far from studying that he does not look at the pictures of any of the great masters, either Italians or Dutch."

There are, indeed, in Mr. Burke's letters to Barry, the painter, a maturity of judgment and a soundness of criticism to which you would do good service in calling the attention of young artists at the present day.

Having now extended this letter to a length I never thought of at the outset, I fear I must conclude, though I flatter myself I should have small difficulty in practically illustrating the few home truths I have ventured to put before you. Believe me, Sir, the fault of the present day is not to *under-rate* modern art.

I will, like Mr. Cave Thomas, conclude with a principle:—"Let us endeavour to understand nature as the most effective course for discovering and destroying all fallacies, and for the revival of truth." Bet it so; but let not our imitation of nature be servile; let us—at least in our works—select the "best parts of the best things." This is the only road to excellence. It has been well said, that no great truth rests for support upon a single argument. You, Sir, as an architect, must be aware that a single column cannot support an entablature. Two principles, *at the least*, are necessary. Apply this to art: let our first principle be — study material nature; our second—"study immortal mind." The artist represents, of necessity, only those objects which are material and fall under the cognizance of the senses. To represent them he must have thorough cognizance of their structure; but to endow them with a living soul, and raise art to her proper position as a moral instructress of mankind, he must study the history of his craft, and not merely nature, but books and men.

My anxiety for the welfare of the arts in this country, and the raising of the standard of general taste, must plead my excuse for so long a letter.—I am, Sir, &c.,

AN AMATEUR.

EXPERIMENTS ON THE STRENGTH OF PORTLAND CEMENT.

ON Monday week, according to previous announcement, various experiments were made at the wharf of Messrs. Robins, Aspdin, and Co., Great Scotland-yard, of which the following are the more important: several of those in the first series, not recorded, broke down at once, without affording an opportunity of further test, and were therefore regarded as *nil*, as they gave way chiefly in the substance of the brick.

In the first series a better sort of stock bricks were attached by the flat side to a wall, and to each other, with cement, and mixtures of sand and cement, and had stood twenty-seven days with proper supports.

1. *Nil.*

2. All cement: 14 bricks. Heavy iron wheel on seventh brick, said to weigh 9 cwt.: substance of third brick gave way in a few minutes with a small additional weight.

3. One cement, to one sand: 30 bricks, with 8lb. weight on last brick: stood till 7lb. weight added, when the brick gave way in three places.

4. One cement, two sand: 22 bricks withstood 1½ cwt. and 11 lbs. on the 22nd brick; broke under 3¼ cwt.: bricks gave way, also cement.

5. One cement, 4 sand: 25 bricks sustained ¼ cwt. on 25th brick till bricks gave way.

6. All cement: 38 bricks, with weight on 38th: equal in all to 40 bricks, when brick gave way.

7. One cement, five sand: 26 bricks, an 8 lb. weight and a 14 lb. added on 26th, equal to 30 bricks. Stood about a quarter of an hour, when more weights added, equal to 35 bricks. Weights taken off, and ¼ cwt. put on 26th brick: sustained it till a brick broke under 74 lbs. weight in all, with additional slight accidental pressure.

8 to 12. (Two of Roman cement included). *Nil.*

13. One cement, one sand, of 28 days' standing: 15 bricks. Borne at each end, and weights attached between: span or bearing 2 ft. 6 in. Bricks broke under weights estimated at 15 cwt., after standing for at least an hour, previous to last addition of heavy cast-iron bars, said to average 1 cwt. each.

The bricks in the next series of experiments were regarded as inferior in quality, and did not appear to support the strength of the cement well: most of these, like the preceding, which were regarded as of better quality, gave way before the full power of the cement had been tested. They were built in bars of 5 feet span, laid horizontally, 3 bricks in breadth, and 3 in thickness, with supports at each end, built on sand, and about two lengths of brick in thickness, from outer edge to inner span. The whole had stood about a month.

1. All cement: loaded by degrees with 58 of the cast-iron bars, or 2 tons 18 cwt., when the bricks broke across in two places.*

2. One cement, five sand: broke in brick and yielded in cement in middle, under a weight of 31 cwt.

3. One Roman cement, one sand: broke in brick and yielded in cement in three places, under a weight of 29 cwt.

4. One cement, three sand: split partially in two places under a weight of 47 cwt., but did not at once give way.

5. One Roman cement, two sand: gave way in cement with a weight of about 21 cwt.

6. One cement, six sand: accidentally struck and hitched at both ends in breaking previous bars: broke in 6 bricks out of 9, under a weight of 24 cwt.

* A fragment picked up consisted of a splinter from four bricks, with the cement like stone, combining them in a cruciform shape.

The next experiment consisted in an attempt to test the power of the Portland cement by pulling asunder two cemented blocks of best Portland stone, each 2 feet long by 9 inches broad in superficies between which the cement had been set for twenty-eight days, the whole being slung on a bearing 3 feet 6 inches across' between two pairs of dogs or nippers, with a weight scale below, in an elevation of 11 feet in height; but the stone scaled and broke under a weight of 38 cwt., the lower stone leaving the cement nearly entire with a stony scaling over its surface above.

The test of the hydraulic press was then applied vertically to a series of blocks of about 18 inches in length by 9½ inches and 9 inches in breadth and thickness, but the base of each block only could be said to be pressed fairly by a surface flush or level with its own, the press being defective in the like appliance above, so that the blocks were more split as by a wedge than fairly crushed. Several containing large proportions of sand gave way under small pressure, not yet indicated by the proper attachment of weights.

1. Four sand, one cement: began to scale under a pressure of 25 tons, but cylinder leaky. Under 36 tons, applied after stoppage of leak, still scaling, and with 40½ tons: split up and down into three wedged-formed pieces, under a pressure of 45 tons.
2. All cement: scaling slightly under a pressure of 58½ tons when press failed in power.
3. All Roman cement, but not well squared: went under 22½ tons.
4. One cement, five sand: scaling under less than 9 tons, which weight crushed the block.
5. One cement, six sand: split under 13½ tons suddenly applied.
6. One cement, seven sand: weight increased from 18 tons to 25, when block yielded.
7. One cement, three sand: split under a pressure of 14 tons. This block was alleged to have been improperly prepared.
8. One cement, one sand: withstood the highest power appliable in the state of the press, namely, 45 tons.

A small piece of pure cement, 1½-inch surface by 1 inch, six months old, and laid on its inch surface, withstood pressure till partially crushed under 18 tons.

A similar piece of Portland stone was said to have been crushed under a pressure of 23 cwt.

The hydraulic press in use on this occasion not being powerful enough to test the strength of the pure cement and its slighter mixtures with sand, the meeting was adjourned till 26th inst., when a short series of experiments, as certified to us by various gentlemen (not being ourselves present), was made on the premises of Messrs. Robinson and Sons (late Bramah's), engineers, Pimlico, when—

1. One of the previous blocks, all cement, and then thirty-five days old, bore a pressure of 68 tons, when it cracked at one angle, but ultimately bore 90 tons without any alteration.
2. An exactly similar block bore 141 tons without even a crack, and stood under that pressure for nearly one minute, when it broke.
3. Another of the same bore 104 tons.
4. One composed of 9 sand and 1 cement bore 4½ tons.
5. One of equal quantities of sand and cement, previously submitted to a pressure of 47 tons, now cracked at that pressure, but ultimately bore a pressure of 108 tons before it broke down, the form of the crack not altering.

The New Park at Battersea.—The new park at Battersea, which has been for some time in abeyance, will be commenced without delay, notices having been conveyed on Saturday to all the residents on the spot, that they must quit possession, the intention being at once to remove the houses. The waterworks will remain. The park will extend the whole distance between Battersea-bridge and Nine Elms, and from the bank of the river to the public road across Battersea Fields, making the length of the park about 2¼ miles, and its width a little more than a mile. A carriage-drive 40 feet in breadth will be formed along the bank of the Thames, and a suspension bridge will be thrown across the river to the spot where the Red House now stands. Towards the construction of this bridge the Marquis of Westminster has contributed the sum of 60,000*l*. At the south-western boundary of the park an elegant church has been erected, and will be ready for consecration in the course of the present autumn.—*Daily News.*

IMPROVEMENT AND DECORATION OF THE ADELPHI THEATRE.

It gave us pleasure to hear that the spirited lessee of the Adelphi Theatre, in the Strand, desiring to decorate the interior of it, had sought the assistance of an architect, Mr. Digby Wyatt; and we are even better pleased to find that the architect has succeeded well, and has produced a very original and pleasing whole.

In designing the decorations of the audience portion of the theatre, Mr. Wyatt's imagination has evidently been influenced by his recollection of those quaint old engravings of the birth-day fêtes of Louis XIV., in which the *bosquets*, set gardens, and other ornamental portions of the *Parterres* of Fontainebleau and Versailles are represented as having been converted, by the addition of trellis, flowers, ribbands, and hastily executed paintings, into temporary *Salles de Spectacle*, or *Salons de danse*. Several of Molière's charming little ballets were composed expressly to be acted on the occasion of these galas, and it was customary both before and after their performance for the noble audience to promenade in Arcadian costume, *en grande tenue*, or disguised in the motley garb of Arlequino, Mascarillo, Scaramuccia, Brigitta, and the other characters of the then fashionable Italian pantomime. The paintings of Watteau, Lancret, Boucher, and many other artists of those good old days of artificial rusticity, commemorate such scenes, and furnish sufficient authority to enable us to identify the source of Mr. Wyatt's inspirations on this occasion.

He has endeavoured to make the drop scene (which has been fairly painted by Messrs. Pitt and Johnstone) accord with the character of the rest of the decoration. As the audience portion of the house carries out the idea of the temporary theatre, so are we led by this picture on to the very scene, in the green *plats* and *allées vertes* of which these courtly revels were wont to be enacted.

The execution of the work was entrusted to Mr. Sang, and has been successfully carried out. There is a slight want of unity in parts, a heaviness of tone in the front of the main tier of private boxes, for example, as compared with the continuation round the dress circle, which we ascribe rather to the executant than to the designer, but we will not let this qualify our warm praise to both.

Considerable improvements have been made under the direction of Mr. C. Manby, in the approaches, ventilation, &c., and by enlarging the stage.

AWARDS OF OFFICIAL REFEREES.

ALTERATION OF SHOPS TO PRIVATE HOUSES.

In an information laid by the surveyor of the district of Greenwich against Mr. Rogers, of Broad-street, City, builder, it was alleged that the said Samuel Rogers was then making certain alterations to the fronts of four houses, by taking out the shop fronts and converting the said four houses into private houses, filling in the openings of the shop fronts the whole height of the ground-floor story with nine-inch brickwork, and leaving the brestsummer and two story posts forming the door-frames in each house as they were fixed, nearer than four inches to the external face of the wall, contrary to the rules of the Act. At the hearing the district surveyor stated that the said houses had been originally built of the fourth rate, but by reason of certain additions made thereto were now of the third rate, in consequence of which the thickness of the external walls ought not to be less than 13 inches in any part; and the builder, Rogers, contended that it was not contrary to the said Act to fill in the opening left by the removal of the shop front with brickwork 8½ inches thick, as he might stop up any window in a third rate house with brickwork of the last-mentioned thickness; and with regard to the brestsummers and story posts, that the same had been left with a view to the subsequent re-insertion of shop fronts if required; and further, that it would endanger the buildings to remove the same, in which opinion the district surveyor concurred; and it further appeared that no evasion of the said first-mentioned Act had been intended, the houses being more expensive with the above-mentioned alterations than they would have been if originally built as required by the district surveyor.

At the hearing it was stated that doubt had arisen between the parties as to whether, in altering the shops into private rooms, it would be contrary to the rule of schedule F. of the Act, to insert the flues from the new fireplaces into the flues of the fireplaces of the story above, and they requested the award of the said official referees thereon.

The referees determined—"First, that inasmuch as in altering the said four houses the front external walls thereof in the ground-floor story have been built of less thickness than is by schedule C. of the first-mentioned Act required for buildings of the third rate of the first class, to which rate and class the said houses belong, and inasmuch as the said brestsummers and story posts which were necessary for the shop front now removed have been left in the said walls, so as to form part of the component materials thereof, and as frames to the doors are not fixed at the distance of 4 inches, at the least, from the external face of the said walls, the said four houses are contrary to schedule D., part 2, of the said first-mentioned Act: but forasmuch as it appears that no evasion of the said Act has been intended, the houses as altered having cost more than they would have cost if originally built as they now are, and as we believe that no useful purpose would be answered by the removal of the brestsummers and story posts, and the filling in with brickwork more than 9 inches thick, we do not give any direction in respect thereof.

Secondly, that if the flues from the fireplaces of the rooms above the said shops have been built and are in every respect in conformity with the rules of schedule F. of the said first-mentioned Act, it will not be contrary to such rules to insert therein the flues from the fireplaces proposed to be formed in converting the said shops into private rooms."

IMPORTANT TO LANDLORDS.

M'EWALL *v.* NEWIN.

This was an action brought in the Islington County Court on Tuesday, before Mr. Serjeant Jones, the deputy judge, to recover the sum of 5*l*. for one quarter's rent, and of 11*l*. 14s. 10d. for repairs of a house situate No. 28, Grove, Holloway. It was alleged that the defendant, who is a laundress, left the premises in a very dilapidated state; the paper being stripped off the walls, the panels of the doors split in several places, the sash-lines broken, the staircase plastered with candle grease and burnt, and other parts of the building injured to such an extent as to leave no doubt that the destruction was the result of wilful damage. Mr. Austin appeared as solicitor for the plaintiff, and Mr. Wakeling for the defendant. The plaintiff stated that in 1846 the house, which was then in the occupation of the defendant, was put in thorough repair; and tradesmen were called, who deposed to the dilapidated state the premises were in after the defendant had quitted them. Mr. Wakeling submitted that the plaintiff was not entitled to recover for repairs, on the ground that there was no covenant in the agreement that the defendant should repair or beautify the premises; and that before he could recover for dilapidations, he must produce the best evidence that the damage was wilful. The plaintiff had merely proved the general repairs; and although from the nature of the defendant's business the paper might have become loose from the effects of the steam, or accidentally stripped off the walls by a child, it could not be said that that was wilful damage; and with respect to other dilapidations, he should be able to shew that they were not to so serious an extent as had been complained of, and were nothing more than the ordinary fair wear and tear of premises that had been occupied for a period of two years by any person carrying on the business of a laundress. In reference to the payment of the quarter's rent, he (Mr. Wakeling) submitted that the plaintiff had waived all claim. The defendant had given him notice to quit at Lady-day; she left the premises, however, on the 17th of March, delivering the key to a Mrs. Butler, who was formerly one of her (defendant's) lodgers, and who, to accommodate the landlord, had removed with the other lodgers to allow the

workmen to do the repairs. From this person (Mrs. Butler) the plaintiff, on the 17th of March, obtained the key of the house, took possession, and set the workmen to do the repairs. Having, therefore, taken possession of the premises before the tenancy had expired, the plaintiff had put an end to the tenancy, and could not recover the rent.

The learned Judge interposed. He was clearly of opinion, he said, that the defendant was to some extent liable for dilapidations, but as he felt some difficulty in estimating the damages, his Honour suggested that the better course would be for the parties to retire, and endeavour to effect an amicable arrangement.

Mr. Wakeling, after conferring with the defendant, made an offer of 5*l*. These terms, were, however, rejected, and witnesses were called who lodged in the house, and whose evidence went to show that it was not untenantable when they left, which was shortly before quarter-day.

Mrs. Butler, the person with whom the key was left, stated that she gave the key to the plaintiff by his own request, and without the knowledge of the defendant. It was returned to her at night, and given to the workmen every morning whilst the house was undergoing repairs.

Mr. Austin, the plaintiff's solicitor, submitted that his client had not held *bonâ-fide* possession, the key having been returned to the last witness every night.

The Judge—That is very satisfactorily explained; it was for your client's convenience. I am of opinion that you have not proved the rent to be due, having taken possession before the tenancy had expired. With regard to the damages for repairs, I do not know how to assess them. I think there are some things which the defendant is liable to make good; but the workmen you employed have made out their bills in the aggregate, so that it is impossible for me to estimate the damages. It was for you to have made out your case, but you having failed in establishing to what extent the defendant is liable, the consequence must be a nonsuit in both cases.

FIGURES.

SIR,—The fact mentioned in your last number—"That upon deducting 1 from the multiplier and adding 1 to the multiplied of any two even numbers, the result is less by 1:"—thus:—

$$\begin{array}{rl} 8 \times 8 \ldots\ldots\ldots & 64 \\ 7 \times 9 \ldots\ldots\ldots & 63 \\ & \hline \\ & 1 \end{array}$$

is only part of a rule that upon deducting *any number* from the multiplier and adding it to the multiplied (in even numbers) the decrease is always *the square of the number* so deducted and added. Thus:—

$$\begin{array}{rl} 8 \times 8 \ldots\ldots & 64 \\ 7 \times 9 \ldots\ldots & 63 \\ & \hline \\ & 1 \text{ square of } 1. \end{array}$$

Deduct and add 2—

$$\begin{array}{rl} 8 \times 8 \ldots\ldots & 64 \\ 6 \times 10 \ldots\ldots & 60 \\ & \hline \\ & 4 \text{ square of } 2. \end{array}$$

Deduct and add 3—

$$\begin{array}{rl} 8 \times 8 \ldots\ldots & 64 \\ 5 \times 11 \ldots\ldots & 55 \\ & \hline \\ & 9 \text{ square of } 3. \end{array}$$

and so on.—I am, Sir, &c., F. L. S.
Holgate-lodge.

AN ARCHITECT'S JAW.—Amongst a number of very odd things, the property of the late reverend Ordinary of Newgate, Mr. Cotton, sold a few days ago, was the asserted "lower jaw of Peter of Cole-Church, the original architect of London-bridge." This bone was found on removing the foundation of part of the old bridge by a Mr. Knight, who superintended the building of the new bridge under Rennie, and the relic was christened by him without any godfather to answer for the child. The real value of the thing seems to have been well understood, for the public would not "take his jaw," and poor Peter fetched but five shillings!

ANOTHER "ORIGINATER OF THE RAILWAY SYSTEM."

A NEW candidate for the honour of being "the actual originater of the railway system,"—due, as we have said, to no one individual,—must now be added to the rather numerous list already on recent record. And if all be true that is alleged, the only wonder is that the name of this new claimant has not been all along interwoven with that of "*his partner in the locomotive patent*," Mr. Geo. Stephenson, the more especially since the former is said to have expended a fortune of his own in laying the foundations of that fortune which the latter realised.

Almost every great invention or discovery, at one particular period in its progress towards public approval and adoption, has to run the gauntlet of that very public's ignorant scorn, and certainly the man who has braved, stirred up, and borne the brunt of that most pitiful and contemptible of all earthly things—the sneers of ignorance and prejudice, in a manly resolve to benefit the scorning public itself, deserves to be held in the most sacred remembrance by all on whom his *indispensable* services have conferred the benefit of thus preparing the way for the smoother and then only practicable progress of those whose destiny it is to consummate what it seldom or never falls to the lot of one to mature as well as to begin.

The lot of Mr. Stephenson fell mainly on the smooth and levelled path whence the pioneers had manfully swept away all the native rugged obstructions which the public mind, in the sarcastic pride of its aboriginal ignorance, inevitably bristles up into the very way which it is itself most thankful to follow whenever its own thorny and inveterately defended obstructions are mowed down, in spite of its own determined opposition. But Mr. William James, of London, engineer, is now declared by "a coal and iron master in Staffordshire," in the *Birmingham Journal*, to have been the man who mainly smoothed the path which his partner, Mr. Stephenson, afterwards trod.

In allusion to a memoir of Mr. Stephenson, quoted from the *Derby Reporter*, this defender of the claim of Mr. James says:—

"It does not state that he was co-partner with Mr. William James, of London, land agent and engineer, in the locomotive patent, or that the latter was the actual originater of the railway system forty years since, by his proposing a line from these towns to Birmingham, through the colliery districts, and a communication from thence by canal to Stafford, and by the river Avon to Bristol, and subsequently *his* more grand project, the Manchester and Liverpool line, for engine-passenger traffic. The biographical notice gives to Mr. Stephenson the undivided honour, by calling him the "father of railways," when it should have referred principally to the improved locomotive engine. The railway machinery has been brought to its present perfection by the combined engineering talent of the nation. William James was really the leader, and the only successful agitator of the subject—the first person who gave the impulse to the ponderous mass of inertia in the public mind, by which vigorous effort the mighty movement commenced, and has been since kept up by Mr. G. Stephenson and his talented son, and other eminent engineers of the age. No one could have succeeded in that undertaking but such a man as William James, who all his life had been accustomed to struggle with and execute difficult projects, who possessed a wide connection with the nobility and great landed proprietors, with whom he was accustomed to mix, and to negotiate matters of business. Being a man of good education, tact, and business habits, he was in all respects the very best captain to attack the strongholds of ancestral prejudice, followed up and supported by Stephenson's practical ability. If two such minds had not been brought happily into apposition, the railway system might have been successfully opposed—the engineering talents of a Stephenson might not have been known, and all the iron sleepers might have slept on still in mother earth, and its great benefits have been denied to the present generation. To William James alone belongs the merit of being its earliest agitater *in all parts* of the kingdom—in making the survey of the first line, and organising the first company, and lodging the first report and plans of the Manchester and Liverpool Railway. The contrast is remarkable in the success in life of the two parties, and there appears to be some mistake and confounding of the labours and position of each. William James was the party who 'underwent something akin to persecution;' he had to bear the first shock of the contest, and this persecution seems to have descended on his family. The sons of genius do not often combine within themselves the faculty of self-interest—the especial glory and climax to be aimed at in vulgar eyes; and thus, for being rich and becoming poor for the public benefit, he has been reviled and pointed at with the finger of scorn *during* his agitation of this project."*

A SITE FOR THE MARBLE ARCH.

SIR,—The addition to the Royal palace now approaching completion, makes it evident that the marble arch should soon be removed, but I have not seen it stated yet where is the destined locality. I suggest that it be placed as an entrance to Kensington Gardens, in the Kensington-road, where the broad walk terminates. As this magnificent walk ends abruptly against the wall, it is in itself incomplete for a purpose. If the arch were placed in a slightly recessed curve from the main road, it would have a beautiful effect, and the superb vista beyond would render the *ensemble* perfect. Besides, at present there is no grand or state entrance to the gardens, nor could any be found so appropriate as this.

If the ugly rear of the pitiful horse-barrack were removed by demolition of the building, and the dwarf wall and railing of the garden made continuous, this entrance to the metropolis would receive a great accession of beauty: ample space for its re-erection would be formed on the green on the western side of the palace buildings, which already has a similar building. The offensive toll-bar would then be removed as a matter of course.—I am, Sir, &c.

AN IDLER IN LONDON.

ALL-ABSORBING CONTRACTORS.

SIR,—About three years ago you were pleased to insert a letter of mine on the subject of the great firms taking contracts for every tradesman's work in building.

What I wish to renew is the good old plan of every material trade contracting for its own work.

Would such fortunes have been made if that had been the case with certain large works; or rather, would not many little fortunes have been made by very deserving tradesmen, competent to the best work, and contented with a little? Society gains nothing by the new plan, and the work is not so well done or so well looked after, and I may say hardly at all by the master.

A broken-down carpenter, a little tyrannical, becomes foreman, and a man of figures a clerk; and then add a questionable plumber, an indifferent smith, and a sort of ironmonger's all-sorts shop, and you make a great builder's establishment. Large contracts bring large sums of money, and squeezing does the rest.

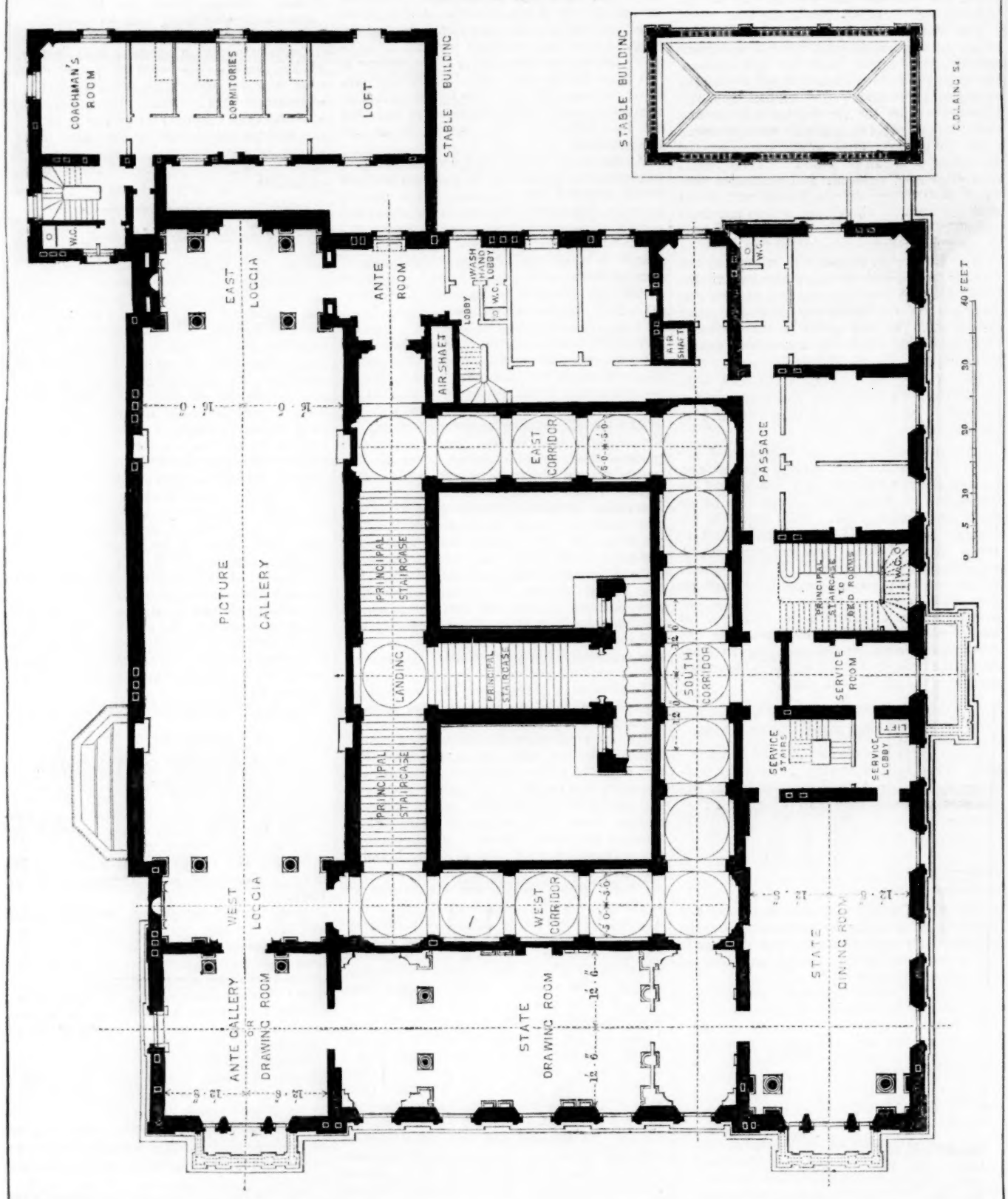
Pray let this question be brought to a fair issue.† The division may be a little more trouble to the architects, but they will get what they are always crying out about, *good work*, by it.—I am, Sir, &c., L. T.

* "William James," he adds, "before he commenced his speculative career, was Lord of Snowford Manor. He raised 100 men as volunteers in Warwick at the time of the threatened invasion, and was elected major, and presented with a sword worth sixty guineas on their being disbanded; and it was shown that his property exceeded 100,000*l*. in value. The last reserve of this fortune was expended in this project of the railway system. He lived through the pelting of the wintry storm, but his more fortunate coadjutor, without education or address to propose a public measure, rose from poverty to wealth in the summer glory of the scheme, and died proprietor of Tapton House. He deserved all the honours that have been heaped upon him; but does not Mr. James's *successful* efforts and *personal* sacrifices in this, and many other great undertakings, deserve commemoration and regard? I was at Liverpool for my health at the period of the first survey, and had opportunities of seeing the parties almost daily."

† With which view, rather than from entire concurrence in the writer's views, we insert this letter.—ED.

PLAN OF BRIDGEWATER HOUSE, LONDON.

MR. BARRY, ARCHITECT.



PLAN AND DETAILS OF BRIDGEWATER HOUSE.

IN the last number but one of our journal we gave an engraving of the west front of Bridgewater House, now in the course of completion for the Earl of Ellesmere, together with a description of the building. Through the kindness of Mr. Barry we are now able to lay before our readers the plan of the principal floor, shewing the picture gallery and loggie, and the *suite* of state rooms; also an elevation of one of the windows, at large, and the elevation, section, and plan of the principal cornice.

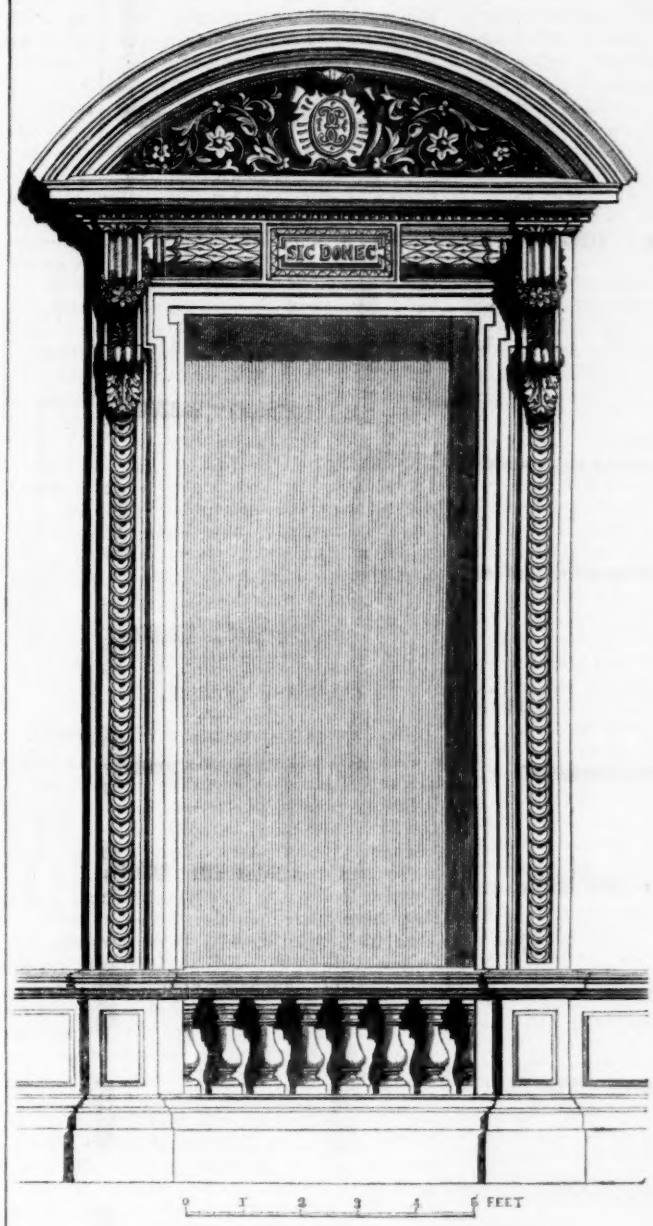
The entrance hall is under the service-room in face of the principal staircase: the corridors are lighted from the open area on either side of the staircase. The columns in the gallery and drawing-room will be of marble.

THE SCHOOLS OF THE SOCIETY OF BRITISH ARTISTS.

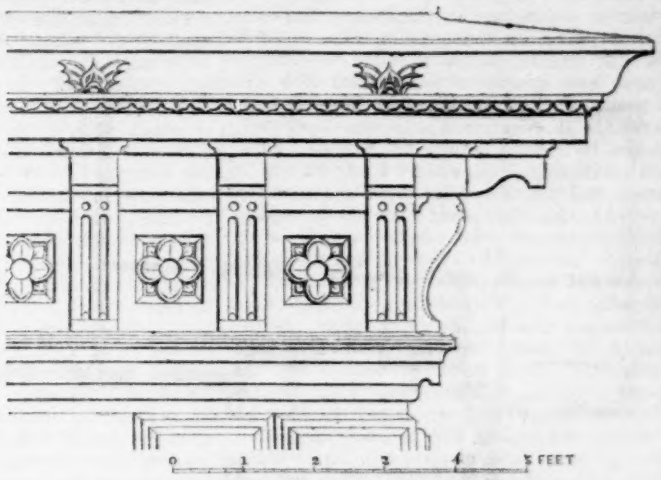
WE have the gratification of recording this week the re-opening of the schools established by this society last year, for the purpose of affording to students the fullest enjoyment, at a moderate cost, of a wide and solid system of education in the graphic art. The difficulties which have hitherto beset the path of the young aspirant are by it greatly lessened, and the result has been, that during the past twelve months 82 pupils have attended the lectures, and received instructions in human and comparative anatomy, geology, and meteorology, in connection with landscape painting, in perspective, and the philosophy of colours. There are open to the students an antique school, the life school, and a classically draped school for female pupils only.

The opening meeting was attended by a large number of amateurs and artists, to whom the president, Mr. Hurlstone, read a highly encouraging report of the prospects and position of the school, and made some very interesting general remarks. With regard to the importance of general information to the artist, Mr. Hurlstone said, the principle of the

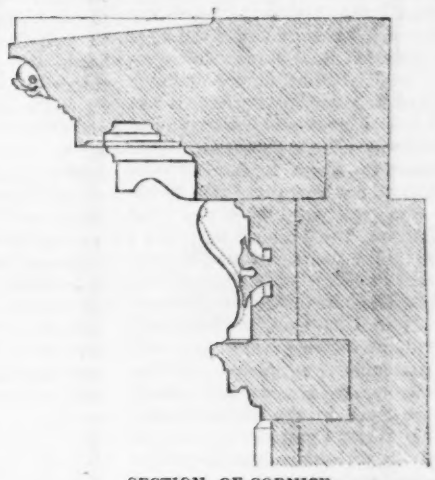
DETAILS OF BRIDGEWATER HOUSE.



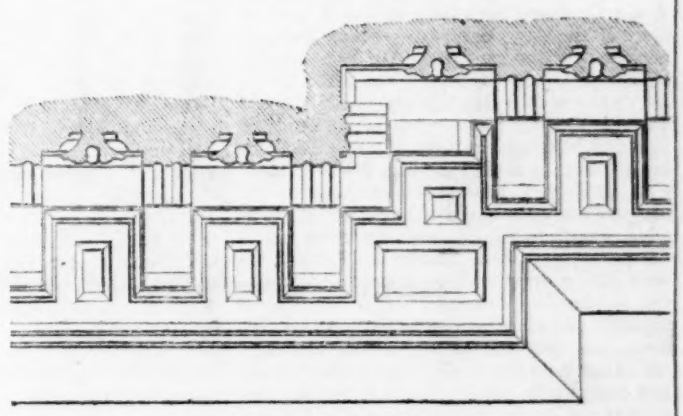
ELEVATION OF WINDOW, PRINCIPAL FLOOR.



ELEVATION OF OUTSIDE CORNICE.



SECTION OF CORNICE.



SOFFIT OF CORNICE.

division of labour which, carried to the extreme, had been so conducive to the prosperity of its manufactures, had had an opposite effect upon the arts of England. It had restricted the study of the artist to a confined sphere, and had prevented him availing himself of those resources, many of which were highly conducive to his eminence in his own art. They might not expect the modern artist, like the great ones of old, to practise with equal devotion and equal success all departments of art — painting, sculpture, and architecture, like Michaelangelo and Leonardo da Vinci, whose comprehensive grasp of knowledge rendering all resources available to them, enabled them to push farther the boundaries of the art—their especial calling. But it was important that the artist should have a knowledge of those departments of science which were essential to the language (if he might so say) of the art, to enable him to express his thoughts with truth, precision, and facility. The facilities afforded to the artist to acquire that most extensive knowledge were, owing to the different condition of society, far greater in the fifteenth and sixteenth centuries than in the present day—in Italy particularly so, from its numerous small courts vying with each other in knowledge and refinement, and in each of which there existed an intimate association, throughout life, of men eminent in different and most varied sciences and arts. But in England at the present day the opposite was the case. The artist was a comparatively isolated being. His communication was rare with men of science; his attention to their pursuits, even although of importance to his own, still more so. To remedy that evil was one of the objects of a school like the present; to bring all science within its walls that may have a direct bearing upon art. To make the education of the artists, the antithesis to that of the mere mechanic, as comprehensive as possible, was the purpose which was now attempted to be carried out.

Mr. Hurlstone was followed by Mr. Wyse (who filled the chair), so well known as an advocate of the advancement of popular education in all its branches. In an elaborate and critical discourse he pointed out the merits of the system of instruction, so wide and practical, adopted by the society, in which the minds of the students were prepared for the reception and arrangement of ideas, in full freedom and under the influence of sound principles, instead of those narrowing and depressive courses of instruction which rest their claims upon imitation alone. The meeting was gratifying to the lovers of art, and the school has our warm wishes for its success.

THE GENERAL BOARD OF HEALTH, under the Public Health Act (11th and 12th Victoria, chap. 63), has just been constituted. The First Commissioner of Woods and Forests (Lord Morpeth) is the president, and Lord Ashley and Mr. Edwin Chadwick are the two other members.

NOTES IN THE PROVINCES.

THERE are 700 houses and shops untenanted, it is said, in the parish of St. Mary's, Nottingham, at present.——The front of a vinegar warehouse at Colchester, has been carried away by the bursting of a vat containing 13,900 gallons of water.——Government have sanctioned the erection of a new Lunatic Asylum at Brentwood.——The attendants at Windsor Castle were completely taken by railway storm on Tuesday week, with a shower of more than 1,000 visiters at once, and tickets for all to view the premises. ——At the Paul-street Baths, Liverpool, 20,650 persons have bathed gratis since March last.——The Newcastle corporation baths and washhouses were inaugurated on Monday week. They contain six warm baths for women with various conveniences, and as many for men, together with a plunge bath and ten dressing rooms in the latter division. There are three rooms for washers, each with ten stands for washing and boiling, and as many doors to a drying-room. The charges are, for a warm bath, 2d.; a plunge bath, 1d.; wash-tub and closet per hour, 1d. A smoke-consuming apparatus has been erected by Mr. Wallace. ——Mr. Bonomi, the architect (says the *Gateshead Observer*), having adopted the egg-shaped drain of Mr. W. B. Wilkinson, of Newcastle, made of artificial stone, for the drainage of the Gateshead lockup, West-street, it was laid by Mr. W. on Monday and Tuesday; but as, to the discredit of our borough, there is no main sewer to which it can be conducted, it cannot be brought into operation until — who will say when? —— At Anderston, Glasgow, the builders have had a caution at the police-court, where Messrs. Law and Selkirk, builders, were charged with having a new building in the course of erection at the New City-road, insufficiently fenced, and without a proper foot-way constructed for passengers, aggravated by neglecting or refusing to remedy the defect. The parties were fined in the lenient penalty of 10*s*.——The Water Company at Glasgow having mercenarily withdrawn the street and lane or close supplies of water, a series of spring wells are being opened, and the Gorbals Water Company have been invited to take the place of the City Company.——Near Dalmarnock, a new wooden bridge has been erected across the Clyde, to supply the place of the old one, now 30 years old, and much decayed. The new bridge, commenced only five months ago, was built by Mr. John Murray, of Coatbridge, from a design by Mr. Robson, C.E., who, it is said, has introduced several improvements in the mode of construction. The whole length is 355 feet, and the width within the side-rails 28 feet. There is a footpath on each side, covered with asphalte pavement, and the roadway is composed of a mixture of asphalte and whinstone metal, broken, 7 inches deep, and laid on the top of the planking, which had been previously caulked with oakum, and coated with pitch and sand, for the purpose of making it water-tight.——The Duke of Bedford is building a mansion at Ardsallagh, 12 miles from Dublin, at the cost of 40,000*l*.

CHURCHES AND CHAPELS.

THE Roman Catholic Chapel of the Holy Apostles, at Clifton, was opened on Thursday week.——The opening of the new church at Llanwenarth, near Abergavenny, took place on Sunday week. The contract was 780*l*., which, with sums expended in walling in the burial-ground, architects' fees, &c., amounted to about 910*l*. It was commenced in September, 1847: Mr. Williams, of Pontypool, was the contractor.——Huntington Chapel, Herefordshire, was consecrated on Friday in last week. It is erected on the site of the old edifice, with the addition of a chancel, from designs by Mr. James Cranstoun. Mr. R. Pritchard was the builder. It will seat about 150 persons: the style is Anglo-Norman. The entrance to the nave is on the south side, through a square-headed doorway with side columns and capitals, from which arch mouldings are raised, forming a tympanum over the oak door. The nave is divided from the chancel by a stone archway, with chamfered jambs running all round, and carved and moulded corbels placed at the springings, carrying inner arch stones with a second chamfer. The masonry over the arch is continued in a gable above the roof, and has springers, copings, and cross, with a circular window in the apex. The nave windows are narrow openings, with semi-circular heads and sunk and chamfered jambs on the outside, and deeply-recessed jambs and niches on the inside, glazed with green glass in small quarries with white borders. The chancel is divided into five compartments by flat buttresses, with a moulded corbel table running round it, under the eaves, and is lighted by three round-headed openings, and two circular windows, which are intended to be filled with stained glass. The roofs are of open timber work, plastered between the rafters, and covered with Staffordshire tiles laid to a high pitch. The plastering between the timber of the apsis roof is illuminated with characteristic devices in ultra marine and vermillion; and round the chancel archway and the arched heads to all the windows appropriate scripture texts are painted with illuminated capitals and borders, enriched and coloured with Norman ornaments. The seats are low and uniform throughout, without any doors, and are arranged on either side of the nave. The pulpit is of stone, with gilding on it. Near the pulpit is an oak lectern with standards and poppy heads, and a carved and gilded cross on each side. The font of stone is a square bowl upon a circular shaft, lined with lead, and having a drain from it into the churchyard. The chancel has a massive oak altar-table, with Norman columns at the angles, and two oak seats of the Glastonbury pattern, with altar-kneelers. In the north wall an aumbury is placed, which is provided with an oak door and strap hinges. The apsis floor is covered with encaustic tiles laid with plain blue and red bands, after the manner of some flooring in Rochester Cathedral, and is raised above the level of the nave by a stone step at the archway.——Stoulton Church, according to the *Worcester Journal*, was re-opened on 13th inst., after being extensively repaired and altered.——St. Sepulchre's Chapel and burial-ground, Jericho, Oxford, were consecrated on 23rd inst.—— Waterbeach Church has had its chancel rebuilt by the new impropriate rector, Mr. Edward Mason.——Thorp-Arch Church is now undergoing considerable repairs, both interior and exterior. —— The foundation stone of the new church of St. Matthew, at Bank-Foot, Bradford, was lately laid. It is to accommodate 500, of whom 250 will sit free, and will consist of a nave and aisles, with a chancel, sacristy, and porch. The style is the decorated of the 14th century. Mr. John Hardy has given 2,500*l*. towards the endowment fund.——The new church of St. Michael, at Whitby, erected chiefly for behoof of sick and infirm persons, unable easily to ascend the flight of 194 steps leading to the old church, was opened last week. The foundation stone was laid on 29th September last year. It is in the early English style, 81 feet long by 40 feet wide, internally, with a chancel 20 feet wide by 12 feet deep. The entrances are at the east end, on each side of the chancel. The roof is open and of a single span, with dressed timbers, stained oak: the side walls are about 20 feet in height, and the apex of the roof nearly 50 feet from the floor. The ends of the building are finished with gables, and on the west gable is placed a bell turret. At the west end are three lancet windows of equal height (about 20 feet) and at the east three others, the central one being somewhat higher. As this church is literally confined by contiguous buildings, no lights could be obtained in the side walls. The sittings are pews fitted with doors, and open benches. There is a small gallery for children, and the entire accommodation is for about 700 persons. As the situation precluded the use of buttresses externally, piers have been advanced inside the building, dividing it into nine compartments, from which the ribs of the roof are made to spring. The exterior is entirely of stone: the interior lining is of brick, and the church will be heated with hot water. Messrs. Atkinson, of York, were the architects, and Mr. Gideon Smales had the contract for the joiners' work; Mr. Thos. Carter the contract as mason, completed under the hon. secretary, Mr. A. Stephenson; Mr. Jos. Brown the contract as glazier, and Mr. W. Stonehouse as painter. A font has been presented by the Archdeacon of York, and an oak pulpit by Mr. W. Cavillier, of Whitby.—— St. John's Church, Newcastle-upon-Tyne, which has been undergoing extensive repairs, alterations, and renovations, was to be re-opened on Sunday last. Mr. Dobson was the architect, and the repairs at first were estimated by him at upwards of 270*l*.; but, in May last, soon after commencing the work, so great was the dilapidation of the building, that the south front of the chancel fell, which rendered it necessary to rebuild the whole length of that front, together with the east end; and besides, the walls generally were found to be in a much more decayed state than was at first anticipated. The most obvious improvement relates to the removal of the pulpit, and the denuding of the pillars, which formerly were so built up as greatly to interrupt the distribution of light, and intercept the view. The pulpit has been removed to the south-west corner of the chancel, from which it is entered, and it projects into the south transept. In the chancel, however, the more important changes have been effected. The south wall and east end have been entirely rebuilt, in accordance with the architecture of the period. The great east window has five compartments, the centre one being assigned to the figure of our Saviour, contributed by Mr. Wailes, who has executed the whole of the glass staining. The oak roof of the chancel was obscured by a coating of lath and plaster, which the churchwardens have removed. The mural monuments have been replaced. A slight alteration has been effected in the arrangement of the pews. This is perhaps one of the oldest ecclesiastical edifices of which this ancient town can boast.

CURRENT COMPETITIONS.

OLDHAM UNION WORKHOUSE COMPETITION.

SIR,—As this workhouse has been twice advertised, and twice competed for, perhaps the following notes of the second competition may not be uninteresting to some of your readers. There were twenty-three designs in all, from which the committee selected, first, six, and afterwards three, *ad referendum*, and which they have placed in the following order:— First, a design marked with a yellow star (which is the production of Messrs. Travis and Mangnall, of Manchester*), provided it can be executed for the sum named in the conditions, 10,000*l*., including the architect's commission. This design, judging from the isometrical view (which was the only drawing of the selected set I was permitted to see), presents a simple appearance, with high-pitched roofs, overhanging eaves and barge-boards; it is proposed to be built of brick, with as few stone dressings as possible. The plan is an extensive court, entered by a large gateway, in the centre of the front range of buildings, which contain the union offices. The lunatic wards, men and womens' wards, and hospitals, form the other three sides, with the chapel and dining-hall in the centre of the main building.

The second in order is marked with a triangle, in red and yellow lines, and is of Gothic character. It is quadrangular on plan, with square towers at the corners of the wings, and a "church!" in the centre, of early decorated architecture, with a tower and spire at the north-west angle, a nave, and a chancel with a three-light window.

The third placed has the motto, "*Ad referendum*," and is of Perpendicular Gothic, with the chapel detached at the north-east corner in advance of the main building, having a nave and chancel and a north porch, and a bell-cote on the west gable: an octangular turret at the angle of the centre main building, terminating in an open spiral belfry, gives a collegiate character to the design.

The set marked "Simplicity and Convenience," is the design for Alysham Union Workhouse, with the Poor Law Commissioners' seals and stamps affixed, and is, I believe, Mr. Donthorn's design for that building.

"*Labore et Honore*" is the motto on the next design, which is Elizabethan in character, very similar in plan and elevation to the Ken-

* The successful candidates in the first competition also, but their design was abandoned because the tenders were very considerably above the amount specified in the instructions.

sington Workhouse, and, from the style and colouring of the isometrical view, I should pronounce it to be by the same authors.

Manchester. SCRUTATOR.

THE NEWBURY SAVINGS BANK COMPETITION.

The successful competitor for the Newbury Bank is Mr. George Truefitt: his designs, which we have not seen, are in the Tudor style, to be of red brick with stone dressings. The building will stand in the centre of the market-place.

DR. REID'S EXTINGUISHER.

SIR,—Dr. Reid's idea of extinguishing a fire on board ship by the use of carbonic acid gas has an exceedingly plausible appearance, but the practical difficulties attending its application will, it seems to me, disqualify it from its intended useful purpose. Every one is aware that carbonic acid gas is as antagonistic to combustion as it is to life—that a flame immersed in it is instantly extinguished. It is with these elementary chemical principles in view that Dr. Reid proposes carbonic acid gas to extinguish fire, and to generate the gas by an admixture of chalk and sulphuric acid. 5 tons of the former and a proportionate quantity of the vitriol he says would, in a few minutes, generate a sufficient quantity of gas for a vessel of 1,000 tons burden. All this is perfect enough in theory. It is just in the application where the difficulty lies. Every body knows the theory of ventilation; and it does not require any great scientific knowledge to demonstrate *on paper* how *perfect* combustion in a furnace may be produced; yet the atmosphere of our public assemblies is as vitiated as ever, and black smoke still issues from the chimneys of our manufactories.

Every ton of timber of the burning ship should generate upwards of 60,000 cubic feet of carbonic acid gas. This is enough in all conscience, without the aid of chalk and vitriol, to check the fire, if it could be made applicable to that purpose.

Complete combustion generating carbonic acid gas is only effected when oxygen combines with carbon in the proportion (in weight) of 16 to 6; if it mixes in the proportion of 8 to 6 the result is carbonic oxide. If it mixes in less proportions a large quantity of carbon passes off in the form of smoke; a small portion of atmospheric air is, however, sufficient to keep alive combustion, and this I think would prove fatal to Dr. Reid's plan. For, unless he excludes the atmospheric air, the mere injection of carbonic acid gas would be of no avail, and if the external air be excluded the fire itself would generate sufficient gas to extinguish the flames.

WILLIAM DREDGE.

ON THE INCLINATION OF ROOFS.

THE inclination of roofs in general ought to be regulated, as students know, by the nature of the climate in which the building is to be erected. Thus, for example, the slope of a roof given to a building erected in a northern climate, should be greater than the slope or pitch of a roof given to a building in a climate where snow is unknown. The ancient Egyptians, Babylonians, Persians, and other eastern nations are well known to have made their roofs quite flat: the same custom also prevailed amongst the Jews.

The reason and origin of this custom may easily be perceived, if we bear in mind, that amongst these nations the roof of the house was considered as the most important part of the structure, and greatly contributed to the comfort of the occupiers: it was also used by them as a place of secresy and retirement, on which, after the turmoil of their daily avocations, they enjoyed the cool evening breezes. As such an application is not obtained amongst us, it is obvious that their example cannot form any argument for the justification of those of our architects who, from a desire to hide the roof,—a desire certainly founded upon a false taste,—make it as flat as possible.

It appears that the Greeks were the first people who departed from the ancient custom of making the roof quite flat, and introduced the custom of making the roof slope each way from the middle to either side, in the same manner as our common pent roofs; still the inclination was small, the height of the ridge above the level of the walls varying from 1-7th to 1-9th of the span, or in other words, from twelve to sixteen degrees; nevertheless, judging from examples left us, a conclusion is easily come to, that although they gave their roofs a trifling incline suited to the climate, it was more for ornamenting this part of the building than otherwise. The Romans gave a greater pitch to their roofs than the Greeks, as in the pediments of their buildings, it will be generally found, they make an angle of about twenty-four degrees. This inclination was well suited to the mild climate of South Europe; but in northern climates, which are so changeable, and subject to heavy falls of snow and rain, it was desirable the inclination should be greater.

Our Gothic ancestors, seemingly aware of this, took care to construct their roofs with a very considerable pitch. Instead of anticipating the taste of our age in the construction of low-pitched roofs, in order to conceal them as much as possible, they were made the most conspicuous part of the building: first, by raising them to a great height; secondly, by constructing them in many various and fantastic shapes; and, thirdly, by perforating them with highly ornamented windows.

In most of our old English buildings, the equilateral triangle seems to have been considered the standard of reference. This remark applies to both public and private edifices. The pitch of about forty-eight degrees continued to be the standard for some time, and was dignified with the title of "true pitch:" subsequently this was abandoned, and the square, or a pitch of forty-five degrees preferred. There are advantages connected with a low pitch roof as well as with the high pitch: economy certainly belongs to the former, a consideration for which is so very prevalent at the present time in our building operations.

G. J. RHODES.

PRACTICAL GEOMETRY AT THE LONDON MECHANICS' INSTITUTION.

ON Tuesday evening in last week, after Mr. J. S. Hallersley had delivered an introductory lecture on the science of Practical Geometry, illustrating the same by models and drawings, Mr. Joseph Ash was elected hon. secretary, and Mr. H. Friend, the retiring secretary, presented a testimonial from the late class to the lecturer (in the shape of a marble and bronze inkstand), with the thanks of the class for the manner in which he had taught them geometry. The speaker justly asked what is a practical man without a knowledge of geometry? as long as he remains ignorant of this science, he is under the control of another in his own sphere of a superior class. For what mechanical profession is there that has not this science for its base? could the engineer construct his engine or his railway, the architect his building, or the mariner his ship, without this science? Nor did it stop here: it gave elegance to the mansion, and strength to the fortress, and they were convinced that geometry formed the principal base of all mechanical arts, and would advise all so situated to study it, not only by books, but practically.

It was afterwards proposed that a geometrical library be established, and a subscription was opened at once for the purpose.

We have lately received from several members of mechanics' institutions a recognition of our earnest though humble endeavours to raise the character of artisans, which is very gratifying to us.

THE CITY.—Mosaic pavement and other Roman remains have been falsely said to have again turned up in Thames-street.——Preparations are being made in the Tower for the erection of a granite statue of the Duke of Wellington.——The decoration of the apartments at Lloyd's, in the Royal Exchange, left unfinished till now, has been at length executed, under the eye of their architect, Mr. Tite, by men from Mr. Sheriff Cubitt's establishment. Imitations of marble, granite, porphyry, &c. and some gilding constitute the principal ornamentation.

DECORATION OF PUBLIC ROOMS.

MISS LINWOOD'S gallery in Leicester-square, late the *Walhalla*, has been decorated for a public drawing room with very considerable success, by Mr. Hurwitz, of Brydges-street. There is an elegance about the whole which we were scarcely prepared for.

The ceiling is decorated in compartments, formed by a representation of panels and soffits of girders, the panels being filled in with an open pattern decoration with a blue background to represent the sky. The soffits or beams are in gold relief, and colours in lines, and etched with gold, and the mitres or intersections are covered with very nice medallions, in stone relief, heightened with gold. The centre of the ceiling has a large circular panel, filled in with a blended sky ground to form a dome, with garlands round it, the spandrils of the garlands being filled in with cupids: from the centre of this panel is suspended a glass chandelier. Two large intervening panels between this and the ends of the room are filled in with allegorical subjects and cupids.

The walls are divided into panels by pilasters, the ground being a tinted satin, and the pilasters, cornice, &c., are in colours relieved with gold: the panels are filled in with flowers, from which again are suspended medallions. The arrangement of the orchestra, gallery, &c., is clever.

Laurent's Casino, in the Adelaide Gallery, is also exceedingly well fitted up, and shews a great advance over the mode of decorating similar places which prevailed in England only a few years ago.

THE BRISTOL ARCHITECTURAL SOCIETY.

THE ANCIENT CROSS AND NEW FOUNTAIN.

A MEETING of this society was held on the 18th inst., when the Venerable Archdeacon Thorpe presided, and addressed the meeting at some length. He particularly alluded to the last year's report, just published, which contains an account of St. Michael's Church, Othery, and some excellent illustrations of the curious ancient altar frontal connected with this church.

The Rev. J. E. Carter, the honorary secretary, having read a list of donations, &c., Mr. Winston read a paper upon glass painting.

The Mayor of Bristol observed that there was a proposition to build a high cross in the College-green, but the plan was not yet determined upon, and as that was an architectural society, he thought it desirable to ascertain from them what was the best material for making it. There was a person at Ipswich who had taken out a patent for an article which would stand comparison with carved stone in appearance, was more durable, and was cheaper.

The Archdeacon said that however valuable the invention alluded to might be, he was not disposed to think it equal to carved stone. He preferred the chisel of the sculptor, and the hand of the carver, to anything which could be accomplished by mechanical pressure.

From a conversation which followed, wherein Mr. Garrard took part, it appeared that it was not yet determined whether to erect a cross or a fountain, or both: that the old cross is too dilapidated to be restored, but that there are accurate drawings of it to reconstruct it.

A WINTER GARDEN AT VAUXHALL.—It is proposed to transform Vauxhall into a winter garden. It is said that the four long avenues which form the large quadrangle at present, are to be increased about 20 feet, that is, 10 feet on either side. The roof of this pathway is to be raised a considerable height, and the whole of it is to be inclosed by means of a panorama of the overland route to India. This is to commence with Marseilles, then are to follow Malta, Alexandria, and all the principal points in the journey. These walks will lead directly to the Waterloo ground, which is to be covered in and converted into a hippodrome, where are to appear all the splendours of the chariot race, and other performances. To the right of the hippodrome there will be constructed a large conservatory, to form a very agreeable promenade, and gas is to simulate the sun.

RAILWAY JOTTINGS.

OUR old friend the flagstaff, string, and pulley signal, has started up again as fresh as ever, not one whit the worse of wear, though clad in its old habiliments, without even a change of shift. "We have great pleasure," says a contemporary, "in noticing an invention of Stephen Reed, Esq., of this town, which is very simple in its construction, and can be managed by the mere action of pulling a lever or a string. It is a staff," &c. &c. "*The guard,* therefore, cannot avoid seeing it; and in case of any accident, either by fire, the breaking of a spring, or other cause, can either stop the train, *or travel to the carriage, and ascertain the reason* of the signal. [How is he to do that? By scrambling over the carriages as usual in so many cases already? Well, since that is a recognised portion of the official duties of a guard, our intelligencer may as well suggest its adoption as that of the scarcely less objectionable staff or standing reed signal.] This signal has been seen by some of the railway authorities [no doubt of it] who readily gave their opinion in its favour, but *doubt its usefulness, for the ease with which mischievous passengers might unnecessarily stop the trains by its use.* [We should have thought so! Well we are always learning something new.] But this objection might easily be obviated, by the the imposition of a fine in such cases. [Might not nervous old women though, as well as mischievous youths, learn, like our cotemporary, how to bring out the reed? or might not playful children take a quiet opportunity of having a pull at the pulley now and then, for the fun of the thing alone, without either mischief or the fear of fine in their eye?] Mr. Reed has devoted much attention to this and other means of safety, where life is in danger." We scarcely think that justice can have been done to this gentleman's invention by thrusting forward this particular apparatus at this time of day, without at least showing how the guard is to be enabled, safely and legitimately, to "travel to the carriage." That is the grand question here as otherwise so often inadvertently hit upon. But at least let the travail give birth to some little means of preventing his brains from being dashed out by the way. Our pertinaciously suggested plan of a protected line of foot-boards or interior passage through the carriages, already adopted in America, *will* work its way into inevitable favour here too, we perceive, since its rough practice is being so constantly and unavoidably blundered on as a requisite adjunct to all sorts of signals, vocal and mechanical, issuing from the interiors of carriages.*——A self-acting signal of a hopeful kind in idea, at least, if not in adaptation, has been patented by Messrs. Cunningham and Carter, the inventors of the ingenious pneumatic railway, for giving notice, to every approaching train, of the exact distance the preceding one is in advance—and thus enabling the engine-driver to regulate his speed accordingly, and prevent accidents. They are to be placed at certain distances on the line, and are worked on by a mechanical arrangement, acted on by each locomotive engine in its passage, when the signal is immediately displayed by night or day, for directions to the next train. Such a signal, if at all practicable, would be far preferable to the movement of a false dial by hand at stations.——Another signal, some time since suggested, for giving due notice to express trains whether they may pass stations situated near curves, is shortly to be provided on the South-Eastern line. The proper signals in this case will be exhibited at 600 yards' distance from a station, by means of a crank and wire worked at the station itself, and the signals will be seen three-quarters of a mile farther. ——Mr. Black, late superintendent of fire-engines at Glasgow, suggests that the usual fog signals should be discontinued, and the firing of swivels substituted. The ringing of a series of alarm bells, too, along the line, from one point to another, he thinks should be practised in cases of danger from obstructions on the line. On the shoemaker's principle, now made obsolete by the advent of gutta percha, that there is "nothing like leather," Mr. Black recommends that no goods train should be without a small portable fire-engine, water cistern, &c., and certainly much valuable property might thus be saved from destruction. ——The number of passengers who travelled by rail during the last half-year, namely, 26,330,492, comprehends a railway ride for every man, woman, and child in England, Scotland, and Ireland, so that we may now be fairly called a nation of railway travellers, even though dividends do not 'look up' very hopefully at this precise moment. Yet it is calculated that within the next five years there will be upwards of 10,000 miles of railway open in Great Britain, which will give permanent employment, at good wages, to upwards of 140,000 persons, representing about 720,000 of gross population, taking five to a family. When it it is considered that there are about 4,000 miles of canals, and about 30,000 miles of turnpike-road in the kingdom, these 10,000 miles of railway in addition, will be an accession of vast importance to our internal communication.—The railway system is still progressing, too, in the United States. There will, probably, be more miles of railway opened this year than in any previous since these works were first commenced. Abut 300 miles will be brought into use this year in the State of New York; about 500 in New England; in New Jersey, 39; Ohio, 50—making in these States nearly 900 miles of railway. Besides this, there are at least 100 miles in progress, part of which will be completed in 1849.——The Saratoga and Whitehall Railway will be finished in October. The Hartford and Providence Company have contracted for 3,000 tons of railway iron, weighing 60 lbs. to the yard. The contract is made at 50 dollars a ton, and the iron is to delivered in New York next spring.

* We are really astonished to find in the recent pages of a scientific contemporary an exactly similar furbishing up of another old modification of the same, identical, and, for the present, useless idea, subject to the same series of objections, so long as we are without the prompt and ready means of enabling the guard to "travel to the carriages," though in all probability some such mode of signalling from carriages may be destined to be of practical utility, over and above the guards' free and constant circuit, *so soon as such means have been provided*, and not one moment sooner. "In fact," says our contemporary, and with obvious truth, "a comprehensive plan of railway signals is the great want of the day. A step in the right direction has been effected by Mr. Edwards, of Cambridge, who has invented an ingenious 'design for railway signal to be applied to passenger carriages, the object being to enable persons travelling to give immediate notice to the guard or driver of the engine, in case of danger, or other circumstances requiring attention.' It would be difficult to describe this invention without reference to the plan; but we may state that, by simple machinery, *at the command of every passenger*, a signal lamp for use by night, and a board by day, may be elevated above the roof of the carriage," &c. &c., of course with all the old apparatus of "spring" and "handle," for which see some old numbers of THE BUILDER. "It thus appears," adds our informant, "that as far as the passenger is concerned, a means of making known his desire for communication with the guard or driver is acquired. *But this does not go far enough:* the person to be communicated with for all effective purposes is the driver, and *the difficulty* of calling his attention from his engine to what is going on behind him, *is yet to be surmounted*; for even supposing the guard to see the signal here described, he has no control over the engine, and till that be the case, we fear that Mr. Edwards's scheme, though good and sufficient as far as it goes, is yet defective and incapable of absolute utility, by reason of its just stepping short of the very link in the chain of communication, without which all the others are comparatively useless." Now, it is indeed remarkable that our contemporary himself does not perceive that he, too, has just stepped short of that very link, namely, in the circuit of the chain of communication by which the guard shall be enabled to "travel to the carriage," and judge for himself as to the necessity or non-necessity of a prompt announcement to the driver, which, if otherwise difficult or impracticable by instant signals, the guard may himself, as the next best, do by the same sort of means by which he was enabled to "travel to the carriage."

METROPOLITAN COMMISSION OF SEWERS.

A GENERAL court was held on Thursday the 21st inst., at the Court-house, Greek-street. The Hon. Frederick Byng in the chair. The salaries of the officers for the last quarter were ordered to be paid; and it was resolved, "That as the present commission was about to expire, all claims outstanding, both of the present and former commissions, should be sent in, that they might be examined and discharged."

On the production of the cheques for five annuitants, Mr. Hutton objected to the principle of including several amounts in one cheque, and was of opinion that a separate one should be prepared for each person, so that a regularity might be observed in their proceedings. This course was ultimately determined on.

On a sum of 500*l.* being named to a Mr. Peachy, a commissioner inquired what this sum was incurred for.—The clerk replied that it was the interest of 30,000*l.* borrowed by the late commissioners for the Kent and Surrey division, which sum was to be repaid by annual bonds of 1,000*l.*—Ordered.

The case of Thomas Mitchell, of Beresford-street, Newington, which has on two other occasions been noticed, was again brought before the court. On a former occasion, a fine of 50*l.* was ordered to be levied upon him, unless the obstruction caused by him to one of the sewers of this commission was removed to the satisfaction of their surveyor.

The surveyor now reported, that since that time Mr. Mitchell had certainly made some alteration to the building over the sewer, but that the obstruction was as great as ever. (A letter was read from Mr. Mitchell, in which he stated that he now considered that he had complied with the orders of the commissioners.)

Lord Ebrington was of opinion, that not having properly removed the obstruction, was a direct act of contumacy to the court, and that the conditional fine of 50*l.* should now be enforced. A few observations having been made on the subject by Mr. Leslie, Mr. Chadwick, and Mr. Hutton, it was finally resolved that the fine of 50*l.* is now confirmed, unless the obstruction is removed within one week; and in default, the surveyor be empowered at once to abate the nuisance.

Miscellanea.

THE "NEW PATENT GAS."—We have received a communication from Ireland, together with documents which clearly prove that what Mr. Stephen White calls his "new patent hydro-carbon gas" is an old "patent water-gas," which cost Mr. John Kelly, of Dublin, architect, 300*l.* to bring it to perfection, and for which he holds a patent for Ireland, useless in Dublin hitherto, on account of monopoly and prejudice on the part of others, and a press of professional engagements on his own part. In 1845 this new patent gas was favourably noticed in the Dublin newspapers, and also in the metropolitan and provincial press of this country. Indeed, that the gas was not *new* we were well aware, but we thought it possible for all that that Mr. White might have been the real originater of the invention. Mr. Kelly's article was thus described in the *Dublin Times* in 1845:—"New Patent Water Gas.—Having last evening visited the house of Mr. Kelly, Upper Gloucester-street, to test the merits of this important invention, we were much pleased at the simplicity of the apparatus, and the brilliancy of the light, which burns without the slightest smoke or smell. As an instance of its adaptation to gentlemen's mansions, shops, &c., in Mr. Kelly's house there can be seen a brilliant gas jet burning within 10 inches of an enriched cornice in two places, and although burning from seven until nine o'clock each night for the last ten, not the slightest stain can be perceived. The gas is made from a retort [the retorts were filled with small pieces of coke, to gain surface] set in the area, with a flue from the furnace to the kitchen chimney: it forms a bench similar to that of a hot hearth in a gentleman's kitchen, over which two cans are placed, one of which is filled with tar or resin oil, and the other with pure water. Each can is fitted with a small straight cock, and by the simultaneous dropping of the water and oil into syphons connected with the retorts, the gas is generated, and passes off by an inch gun barrel pipe into the gasometer, which is placed under the landing of the hall door, a distance of about 60 feet."

METHOD OF WELDING IRON, STEEL, AND SHEET-IRON.—In an earthen vessel melt borax, and add to it 1-10th of sal-ammoniac. When these ingredients are properly fused and mixed, pour them out upon an iron plate, and let them cool. There is thus obtained a glassy matter, to which is to be added an equal quantity of quick lime. The iron or steel which are to be soldered are first heated to redness; then this compound, first reduced to powder, is laid upon them—the composition melts and runs like sealing-wax; the pieces are then replaced in the fire, taking care to heat them at a temperature far below that usually employed in welding; they are then withdrawn and hammered, and the surfaces will be found to be thus perfectly united. The author asserts that this process, which may be applied to welding sheet-iron tubes, never fails.—*Rec. de la Soc. Polytech.*

THE TIMBER PLUNDERING IN THE NEW FOREST.—The inquiry is far from approaching a close, and a party most seriously implicated has absconded. The officers have found timber "irregularly" obtained at the Northern yards and at Jersey: if the inquiry is fully carried out, in fact, it may be said to be at present only in its commencement.

PROJECTED WORKS.—Advertisements have been issued for tenders by 9th October, for the erection of a pair of semi-detached villas; by 12th, for the erection of a new Independent Chapel at Haverstock-hill, Hampstead; and by 3rd, for a supply of 1,000 tons of Guernsey lumps for St. Luke's, Chelsea.

PERPETUAL MOTION BY A VACUUM.—A correspondent who signs himself "Dædalus" writes,—Sir: It is to be regretted that your correspondent, Mr. Barratt, has contented himself with merely asserting his belief in the possibility of a perpetual motion, by obtaining and keeping a vacuum. If he would favour your readers with his views, their truth or fallacy would appear, and he might be awarded the praise of having discovered some useful application of atmospheric pressure as a working power; which, in his opinion, scientific men have hitherto singularly overlooked. His statement, as made in your journal of the 16th instant, is too vague to convey an adequate idea of his theory and practice. That he should divulge this is the more important inasmuch as he conceives he has already been anticipated by another party abroad, and I may mention that a party in Ireland has patented and made considerable progress in the construction of an engine to be worked on some system of a perpetual vacuum, as I am informed."

WHITWORTH'S STREET-SWEEPING MACHINE.—The inventor, Mr. Whitworth, in a "general summary of the advantages machine-sweeping possesses over hand-sweeping," thus contrasts the two systems:—"By hand-sweeping, the dirt has to be gathered together by one operation, and the carts loaded by another; the machines load and sweep at one operation: in hand-sweeping, the dirt gathered is liable to be splashed over the street and over the passengers; by the machines, it is at once carried away: heaps of dirt are sometimes left by hand-sweepers at the side of the roads, and become a source of danger, as well as of annoyance, to carriages and foot-passengers; by machine-sweeping this evil is entirely obviated: hand-sweeping obliges the carts to stand in the streets, while being loaded, causing loss of time and obstruction of the traffic; the machines load as they sweep, passing along at the rate of a common cart: the cleanliness of a town cannot be greatly increased by hand-sweepers without great increase of cost; the economy of machine-sweeping increases in proportion to the cleanliness produced: hand sweepers cannot easily and cheaply be increased, according to the exigencies of cleansing; an extra number of machines can be kept ready for emergencies, with little trouble or cost: hand-cleansing has but little tendency to improve and consolidate the road; machine-sweeping tends powerfully to remove ridges and improve the surface: the continuance of hand-sweeping tends to perpetuate a degraded and ill-paid class of labourers, whom the introduction of the machine will elevate, or supersede by better paid and better conducted men, who must be employed to manage the machines. All these advantages are obtained, together with greatly-increased cleanliness."

ANOTHER MARY OF GUELDRES.—The Edinburgh antiquaries have been thrown into a state of excitement by the discovery of another female skeleton in a leaden coffin under the site of Trinity College Church. Professor Simpson is likely, it appears, to decide the question of identity even at this rather late inquest, having pointed out marked evidence of cerebral disease. Professor Goodsir, too, has since, it is said, traced out the evidence of congenital malformation in the head; and the two professors are likely to be thus able to prove the total incapability of the ancient tenant of this mouldering tabernacle to display such character or conduct as that ascribed to Queen Mary of Gueldres.

BRADFORD MECHANICS' INSTITUTE.—The annual distribution of prizes was awarded on Tuesday week in the Athenæum of the Institute; the Rev. Dr. Acworth, president, in the chair; when a series of books were distributed as prizes to successful competitors in drawing as well as other branches of ordinary school education. The formation of classes for the study of chemistry and natural philosophy in general was resolved on.

FIRING SHELLS BY ELECTRICITY.—Experiments were some time since announced from America, which were said to have gone far to establish the practicability of this novel operation, and to teach us that there is no end to the unlooked-for and unlikely adaptations of even now it might be thought pretty well exhausted, or at least familiarized discoveries in science, such as that for which a Franklin has already done so much honour to the land of which he was a denizen. Renewed experiments by the inventor, Lieut. Moor, of the United States' Navy, have been gone into, which, according to an American authority, have removed all doubts. The loaded shell is prepared with the end of a coil of wire attached to it, which, on being discharged from the mortar, it carries out with it like the string of a kite. The near end of the coil is free to be taken to a galvanic battery at any moment during the flight. It is a species of electro-magnetic telegraph applied to the flying shell, which it overtakes and explodes at any moment with the rapidity of thought.

THE SPIRE OF ST. MARY'S CHURCH, SNETTISHAM, NORFOLK.—A correspondent informs us that the lofty stone spire of this church, which, on account of its towering eminence, is used by mariners as a sea mark, being 105 feet in height, and together with the church reaching an altitude of 177 feet, has recently undergone a careful restoration, and the upper part to the extent of several feet has been entirely reset, and an iron cross and weather-cock raised on its summit. Crosses have also been added over the gables of each of the spire windows. These designs were furnished by Mr. H. L. S. Le Strange, and the mason's work has been executed by Mr. William Brown, of Lynn. To raise the scaffolding Mr. Brown availed himself of the openings formed by the upper windows of the spire, which are about 30 feet below the summit: through these he passed, at right angles, boards of such a length as to leave the ends projecting—these were secured at the centre and formed a cross: from the projecting ends he carried a gallery round with a hand rail—the whole forming a light and secure stage, of simple materials, and at a small expense.

CAXTON MONUMENT.—Sir: There are several reasons for the interest falling off on the above subject; one of which is the not determining on a proper place for it, as the former situation is wanted for the Westminster improvements, and cannot be kept vacant for an uncertainty. This being the case, I would suggest the site of the three houses in Poet's Corner, as, from old associations, being every way applicable, as well as being ornamental to the neighbourhood, and consistent with the alterations about to be carried on near there also; and I have no doubt this would meet with the approbation of the dean and chapter of Westminster. My reason for addressing you is because you seem to be nearly the only one that takes any interest in the matter. M. P. VITRUVIUS.

TENDERS

For six houses to be built at Lewisham, for Messrs. Aird and Quick. Messrs. W. Smith and Sons, Architects, Greenwich.

Hill	£5,870
Howard	5,143
Harnden	5,140
Rider	5,130
Goodwin	4,890
Paull	4,877
Cooper and Davis	4,875
Taylor	4,797
Coleman	4,771

For new Warehouses at Camden-town Glass Works, for Messrs. Chance, Brothers, and Co. Mr. W. Hambley, architect.

Thompson	£4,890
Lawrence and Son	4,768
Curtis	4,694
Trego	4,648
Jay	4,587
Locke and Nesham	4,458
Grimsdell	4,293
Burton	4,191
Glenn	3,965
Frasi	3,650

For the erection of Alms Houses, &c., Wellclose-square, Whitechapel, for Mr. Joel Emanuel. Mr. Moffatt, architect.

Jay	£2,616 0 0
Glenn	2,462 0 0
Bridger and Co.	2,265 0 0
Myers	2,262 2 6
Patrick	2,243 0 0
Smith	2,238 0 0
Howard	2,215 0 0
Goodwin	2,137 0 0
H. W. Cooper	1,987 0 0

TO CORRESPONDENTS.

Correspondents must excuse us till next week.

ADVERTISEMENTS.

CAMDEN TOWN.—R. FULKES'S RANGE and STOVE MANUFACTORY, 91, Park-street.
Elliptic Stoves, 3d. per inch. Register Stoves, 6d. per inch.
Self-acting Ranges, with Oven and Boiler and Revolving Shelves, 3 ft., 35s.; 3 ft. 6 in., 60s.
Coppers, 1s. 2d. per lb. Sash-weights, 6s. 6d. per cwt.
Clasp Nails, 13s. 6d. per cwt. Lath ditto, 10s. 6d. per cwt.
Builders' Ironmongery of a 1 descriptions equally low.

OLD-ESTABLISHED WHOLESALE IRONMONGERY WAREHOUSE, Kitchen-range, and Stove-grate Manufactory 18, Cross-street, Walworth.
JOHN GRICE most respectfully solicits the attention of Architects, Builders, and Carpenters, to his Stock of Black and Bright Stoves, Kitchen Ranges, &c., &c.
Black Registers, from 6½d. per in. and upwards.
Bright ditto with Black and Bright Bars, 2l. 10s. and upwards.
Self-acting Kitchen Ranges, with Oven and Back Boiler, Wrought Bars, Fittings Bright:—

3 ft.	3 ft. 6 in.	4 ft.
2l. 3s.	2l. 14s.	4l. 4s.

All articles made on the premises and warranted, and delivered free of expense within five miles of London. Bell-hanging in superior style, hung in secret, 9s. per pull.

TO ARCHITECTS, BUILDERS, &c.
R. HENLY and Co., WHOLESALE IRONMONGERS, and Manufacturers of KITCHEN-RANGES, STOVES, &c., 198, Blackfriars-road, and 117, Union-street, Borough.
Strong Self-acting Kitchen Ranges, with Back Boiler and Oven, and Wrought Bars:—

3 ft.	3 ft. 3 in.	3 ft. 6 in.	3 ft. 9 in.	4 ft.
£3. 6s.	£3. 13s.	£3. 19s.	£4.	£4. 10s.

Henly's Patent Improved, with back Boiler and Wrought Iron Oven:—

3 ft.	3 ft. 3 in.	3 ft. 6 in.	3 ft. 9 in.	4 ft.
£5.	£5. 15s.	£6. 5s.	£6. 10s.	£7.

Best Register Stoves, at 7d., 8d., and 9d. per inch.
Do. Elliptic do., at 3½d., and 4d. do.
Manufacturer of WOLFASTON'S PATENT REGISTER STOVES, a certain cure for SMOKY CHIMNEYS, and effecting a great saving in fuel. To be seen in use daily.
Orders from the Country, accompanied with a remittance or reference, will meet with prompt attention.

TO BUILDERS and CARPENTERS.—Elliptic Stoves, double backs, 3d. per inch. Registers, 6½d 7d., 8d. per inch.
Cottage Ranges, with Ovens and Boilers, 3 ft. 2 in., 40s.; 3 ft. 4 in 42s.; 3 ft. 6 in., 44s.
Self-acting Ranges, with Circular Oven and Back Boiler, best Wrought Bars and Bright Fittings,
3 ft., £3. 3s. 3 ft. 6, £3. 12s. 6d. 4 ft., £4.
Best Patent Cut Clasp.

4½d.	5d.	7d.	10d.	1s. 2d.	1s. 8d. per 1,000.
3d.	4d.	6d.	8d.	10d.	20d.

Best Sheet Floor Brads 12s. per cwt.
Best Town Glue 26s. Do. Scotch, 32s. per cwt.
Best Patent Sash Line.

4s. 3d.	5s.	6s. 6d.	7s. 6d.	10s.	12s. per gross.
1	2	3	4	5	6

At F. R. WILLIAMSON'S IRONMONGERY and STOVE WAREHOUSE, 35, Chiswell-street, Finsbury-square.
Lists of Prices had on application at the Warehouse, or by letter pre-paid, inclosing postage stamp.
N.B Warehouse closes at Seven o'clock.

NOTT'S PATENT STOVES, for warming Churches, Chapels, Shops, Warehouses, &c.—Architects, Builders, and Ironmongers are informed that the manufactory is REMOVED from Great Queen-street to Messrs. Benham and Sons, Wigmore-street, Cavendish-square, where there is also a large assortment of other Warm Air Stoves, and a very extensive variety of fashionable Stove Grates, Fenders, and Fire-irons.—N.B. Churches, Conservatories, and other Buildings warmed by hot water.

BURBIDGE and HEALY, 130, FLEET-STREET, LONDON, beg respectfully to inform the Building Public that they fit up COOKING ARRANGEMENTS for large Mansions, with patent appliances on scientific principles, which ensure greater economy and efficiency than hitherto attained. Also HOT WATER APPARATUS, upon improved and scientific principles, which they recommend for its peculiar safety for the Warming of Mansions, &c.
They fit up Laundries with Hot Water Apparatus, for Drying in a cleanly, expeditious, and safe manner. They also fit up BATHS with elegant arrangements, with every modern scientific improvement. Also Apparatus for the plentiful supply of Hot Water for Baths and general use of Mansions and large establishments.

TO ARCHITECTS AND BUILDERS.
CHUBB'S WROUGHT-IRON and FIRE-PROOF DOORS and FRAMES, for strong Rooms. A large stock of the above, of all sizes, made in the best manner, and of different strengths, fitted with CHUBB'S PATENT DETECTOR LOCKS, throwing from two to twenty bolts, constantly on sale, at very moderate prices. FIRE-PROOF SAFES of every size, and Patent Detector Locks and Latches for all purposes.—C. CHUBB and SON, sole Manufacturers, 57, St. Paul's Churchyard, London.

TO ARCHITECTS, BUILDERS, &c.
COPPER-WIRE CORD.—R. S. NEWALL and Co.'s PATENT IMPROVED COPPER-WIRE CORD for WINDOW SASH LINES, Hot-houses, Lightning Conductors, Hanging Pictures, Clock Cord, and various other purposes for which hempen rope has hitherto been used. This new and valuable Patent is fast superseding the use of the hempen cord, and is strongly recommended to all builders and other parties connected with the above. The Wire Cord may be had wholesale, and specimens seen at the office of the Patentees, No. 163, Fenchurch-street, W. T. ALLEN, Agent; or retail of G. and J. DEANE, 46, King William-street; E. PARKS, 149, Fleet-street; T. JONES, 62, Charing Cross, and GIBBONS and CO., 345, Oxford-street; also of all respectable Ironmongers.

GALVANIZED IRON FOR ROOFING, &c.—The Galvanized Iron Company beg to direct the attention of architects, surveyors, builders, and others, to their Patent Galvanized Iron, which is peculiarly adapted for ROOFING and BUILDING PURPOSES, especially for Tropical climates, being cheaper and more durable than zinc, lead, tin, or any other metal, calculating weight and strength. This fire-proof material has been used for roofing the new Houses of Parliament, shipbuilding and timber sheds in her Majesty's dock-yards of Deptford, Woolwich, Chatham, and Portsmouth; and at many of the principal Railway stations, gas works, &c. &c. This material is also admirably adapted for the construction of conservatories, fire-proof buildings, chain and wire rope bridges, corrugated doors, shutters, &c. &c. Specimens may be seen, and every information obtained at the Offices of the Company, No. 3, Mansion House Place, City—London. Works at Millwall, Poplar, Middlesex; Broad-street, Birmingham; Cobyn's Hall, near Dudley.

LIGHTNING CONDUCTORS for BUILDINGS.—SMITH'S PATENT COPPER WIRE ROPE is being daily employed for the protection of CHURCHES and other buildings from the effects of thunder-storms. It possesses important advantages over other forms of conductors. References can be given where it has been applied for some time past to CHURCHES, PUBLIC and PRIVATE BUILDINGS, &c. &c. Its general adoption in the Naval and Mercantile Marine of this and other countries is the strongest possible EVIDENCE of its EFFICIENCY, &c.
SMITH and ENGLISH beg the attention of those engaged in building to their IMPROVED PATENT PANELLED and REVOLVING IRON SHUTTERS.—Also, the Patent Weather-tight Fastening and Cill Bar, for French Casements, which are so much admired for their security, simplicity, cheapness, and efficiency. Of the merits of their
Patent Double and Single Action Door Springs,
Improved Flooring Cramps,
Patent Wire Sash Lines, &c. &c.,
little need be said, as they are pretty generally known and appreciated.
Manufactory for Iron Suspension, Sliding, and other Doors, Strong Rooms, Plain and Ornamental Palisading, Gates, and Columns.—Also, Metal Sashes, Shop-fronts, Stall-board Plates, Brass, Butt, and other Hinges. Buildings heated upon a new, safe, and superior plan.
Estimates given for every description of Metal-work.
SMITH and ENGLISH 69, Prince-street, Leicester-square, London.

RAILWAY JOTTINGS.

OUR old friend the flagstaff, string, and pulley signal, has started up again as fresh as ever, not one whit the worse of wear, though clad in its old habiliments, without even a change of shift. "We have great pleasure," says a contemporary, "in noticing an invention of Stephen Reed, Esq., of this town, which is very simple in its construction, and can be managed by the mere action of pulling a lever or a string. It is a staff," &c. &c. "*The guard,* therefore, cannot avoid seeing it; and in case of any accident, either by fire, the breaking of a spring, or other cause, can either stop the train, *or travel to the carriage, and ascertain the reason* of the signal. [How is he to do that? By scrambling over the carriages as usual in so many cases already? Well, since that is a recognised portion of the official duties of a guard, our intelligencer may as well suggest its adoption as that of the scarcely less objectionable staff or standing reed signal.] This signal has been seen by some of the railway authorities [no doubt of it] who readily gave their opinion in its favour, but *doubt its usefulness, for the ease with which mischievous passengers might unnecessarily stop the trains by its use.* [We should have thought so! Well we are always learning something new.] But this objection might easily be obviated, by the the imposition of a fine in such cases. [Might not nervous old women though, as well as mischievous youths, learn, like our cotemporary, how to bring out the reed? or might not playful children take a quiet opportunity of having a pull at the pulley now and then, for the fun of the thing alone, without either mischief or the fear of fine in their eye?] Mr. Reed has devoted much attention to this and other means of safety, where life is in danger." We scarcely think that justice can have been done to this gentleman's invention by thrusting forward this particular apparatus at this time of day, without at least showing how the guard is to be enabled, safely and legitimately, to "travel to the carriage." That is the grand question here as otherwise so often inadvertently hit upon. But at least let the travail give birth to some little means of preventing his brains from being dashed out by the way. Our pertinaciously suggested plan of a protected line of foot-boards or interior passage through the carriages, already adopted in America, *will* work its way into inevitable favour here too, we perceive, since its rough practice is being so constantly and unavoidably blundered on as a requisite adjunct to all sorts of signals, vocal and mechanical, issuing from the interiors of carriages.*——A self-acting signal of a hopeful kind in idea, at least, if not in adaptation, has been patented by Messrs. Cunningham and Carter, the inventors of the ingenious pneumatic railway, for giving notice, to every approaching train, of the exact distance the preceding one is in advance—and thus enabling the engine-driver to regulate his speed accordingly, and prevent accidents. They are to be placed at certain distances on the line, and are worked on by a mechanical arrangement, acted on by each locomotive engine in its passage, when the signal is immediately displayed by night or day, for directions to the next train. Such a signal, if at all practicable, would be far preferable to the movement of a false dial by hand at stations.——Another signal, some time since suggested, for giving due notice to express trains whether they may pass stations situated near curves, is shortly to be provided on the South-Eastern line. The proper signals in this case will be exhibited at 600 yards' distance from a station, by means of a crank and wire worked at the station itself, and the signals will be seen three-quarters of a mile farther. ——Mr. Black, late superintendent of fire-engines at Glasgow, suggests that the usual fog signals should be discontinued, and the firing of swivels substituted. The ringing of a series of alarm bells, too, along the line, from one point to another, he thinks should be practised in cases of danger from obstructions on the line. On the shoemaker's principle, now made obsolete by the advent of gutta percha, that there is "nothing like leather," Mr. Black recommends that no goods train should be without a small portable fire-engine, water cistern, &c., and certainly much valuable property might thus be saved from destruction. ——The number of passengers who travelled by rail during the last half-year, namely, 26,330,492, comprehends a railway ride for every man, woman, and child in England, Scotland, and Ireland, so that we may now be fairly called a nation of railway travellers, even though dividends do not 'look up' very hopefully at this precise moment. Yet it is calculated that within the next five years there will be upwards of 10,000 miles of railway open in Great Britain, which will give permanent employment, at good wages, to upwards of 140,000 persons, representing about 720,000 of gross population, taking five to a family. When it it is considered that there are about 4,000 miles of canals, and about 30,000 miles of turnpike-road in the kingdom, these 10,000 miles of railway in addition, will be an accession of vast importance to our internal communication.—The railway system is still progressing, too, in the United States. There will, probably, be more miles of railway opened this year than in any previous since these works were first commenced. Abut 300 miles will be brought into use this year in the State of New York; about 500 in New England; in New Jersey, 39; Ohio, 50—making in these States nearly 900 miles of railway. Besides this, there are at least 100 miles in progress, part of which will be completed in 1849.——The Saratoga and Whitehall Railway will be finished in October. The Hartford and Providence Company have contracted for 3,000 tons of railway iron, weighing 60 lbs. to the yard. The contract is made at 50 dollars a ton, and the iron is to delivered in New York next spring.

* We are really astonished to find in the recent pages of a scientific contemporary an exactly similar furbishing up of another old modification of the same, identical, and, for the present, useless idea, subject to the same series of objections, so long as we are without the prompt and ready means of enabling the guard to "travel to the carriages," though in all probability some such mode of signalling from carriages may be destined to be of practical utility, over and above the guards' free and constant circuit, *so soon as such means have been provided,* and not one moment sooner. "In fact," says our contemporary, and with obvious truth, "a comprehensive plan of railway signals is the great want of the day. A step in the right direction has been effected by Mr. Edwards, of Cambridge, who has invented an ingenious 'design for railway signal to be applied to passenger carriages, the object being to enable persons travelling to give immediate notice to the guard or driver of the engine, in case of danger, or other circumstances requiring attention.' It would be difficult to describe this invention without reference to the plan; but we may state that, by simple machinery, *at the command of every passenger,* a signal lamp for use by night, and a board by day, may be elevated above the roof of the carriage," &c. &c., of course with all the old apparatus of "spring" and "handle," for which see some old numbers of THE BUILDER. "It thus appears," adds our informant, "that as far as the passenger is concerned, a means of making known his desire for communication with the guard or driver is acquired. *But this does not go far enough:* the person to be communicated with for all effective purposes is the driver, and *the difficulty* of calling his attention from his engine to what is going on behind him, *is yet to be surmounted;* for even supposing the guard to see the signal here described, he has no control over the engine, and till that be the case, we fear that Mr. Edwards's scheme, though good and sufficient as far as it goes, is yet defective and incapable of absolute utility, by reason of its just stepping short of the very link in the chain of communication, without which all the others are comparatively useless." Now, it is indeed remarkable that our contemporary himself does not perceive that he, too, has just stepped short of that very link, namely, in the circuit of the chain of communication by which the guard shall be enabled to "travel to the carriage," and judge for himself as to the necessity or non-necessity of a prompt announcement to the driver, which, if otherwise difficult or impracticable by instant signals, the guard may himself, as the next best, do by the same sort of means by which he was enabled to "travel to the carriage."

METROPOLITAN COMMISSION OF SEWERS.

A GENERAL court was held on Thursday the 21st inst., at the Court-house, Greek-street. The Hon. Frederick Byng in the chair. The salaries of the officers for the last quarter were ordered to be paid; and it was resolved, "That as the present commission was about to expire, all claims outstanding, both of the present and former commissions, should be sent in, that they might be examined and discharged."

On the production of the cheques for five annuitants, Mr. Hutton objected to the principle of including several amounts in one cheque, and was of opinion that a separate one should be prepared for each person, so that a regularity might be observed in their proceedings. This course was ultimately determined on.

On a sum of 500*l.* being named to a Mr. Peachy, a commissioner inquired what this sum was incurred for.—The clerk replied that it was the interest of 30,000*l.* borrowed by the late commissioners for the Kent and Surrey division, which sum was to be repaid by annual bonds of 1,000*l.*—Ordered.

The case of Thomas Mitchell, of Beresford-street, Newington, which has on two other occasions been noticed, was again brought before the court. On a former occasion, a fine of 50*l.* was ordered to be levied upon him, unless the obstruction caused by him to one of the sewers of this commission was removed to the satisfaction of their surveyor.

The surveyor now reported, that since that time Mr. Mitchell had certainly made some alteration to the building over the sewer, but that the obstruction was as great as ever. (A letter was read from Mr. Mitchell, in which he stated that he now considered that he had complied with the orders of the commissioners.)

Lord Ebrington was of opinion, that not having properly removed the obstruction, was a direct act of contumacy to the court, and that the conditional fine of 50*l.* should now be enforced. A few observations having been made on the subject by Mr. Leslie, Mr. Chadwick, and Mr. Hutton, it was finally resolved that the fine of 50*l.* is now confirmed, unless the obstruction is removed within one week; and in default, the surveyor be empowered at once to abate the nuisance.

Miscellanea.

THE "NEW PATENT GAS."—We have received a communication from Ireland, together with documents which clearly prove that what Mr. Stephen White calls his "new patent hydro-carbon gas" is an old "patent water-gas," which cost Mr. John Kelly, of Dublin, architect, 300*l.* to bring it to perfection, and for which he holds a patent for Ireland, useless in Dublin hitherto, on account of monopoly and prejudice on the part of others, and a press of professional engagements on his own part. In 1845 this new patent gas was favourably noticed in the Dublin newspapers, and also in the metropolitan and provincial press of this country. Indeed, that the gas was not *new* we were well aware, but we thought it possible for all that that Mr. White might have been the real originater of the invention. Mr. Kelly's article was thus described in the *Dublin Times* in 1845:—"New Patent Water Gas.—Having last evening visited the house of Mr. Kelly, Upper Gloucester-street, to test the merits of this important invention, we were much pleased at the simplicity of the apparatus, and the brilliancy of the light, which burns without the slightest smoke or smell. As an instance of its adaptation to gentlemen's mansions, shops, &c., in Mr. Kelly's house there can be seen a brilliant gas jet burning within 10 inches of an enriched cornice in two places, and although burning from seven until nine o'clock each night for the last ten, not the slightest stain can be perceived. The gas is made from a retort [the retorts were filled with small pieces of coke, to gain surface] set in the area, with a flue from the furnace to the kitchen chimney: it forms a bench similar to that of a hot hearth in a gentleman's kitchen, over which two cans are placed, one of which is filled with tar or resin oil, and the other with pure water. Each can is fitted with a small straight cock, and by the simultaneous dropping of the water and oil into syphons connected with the retorts, the gas is generated, and passes off by an inch gun barrel pipe into the gasometer, which is placed under the landing of the hall door, a distance of about 60 feet."

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THE TIMBER PLUNDERING IN THE NEW FOREST.—The inquiry is far from approaching a close, and a party most seriously implicated has absconded. The officers have found timber "irregularly" obtained at the Northern yards and at Jersey: if the inquiry is fully carried out, in fact, it may be said to be at present only in its commencement.

PROJECTED WORKS.—Advertisements have been issued for tenders by 9th October, for the erection of a pair of semi-detached villas; by 12th, for the erection of a new Independent Chapel at Haverstock-hill, Hampstead; and by 3rd, for a supply of 1,000 tons of Guernsey lumps for St. Luke's, Chelsea.

PERPETUAL MOTION BY A VACUUM.—A correspondent who signs himself "Dædalus" writes,—Sir: It is to be regretted that your correspondent, Mr. Barratt, has contented himself with merely asserting his belief in the possibility of a perpetual motion, by obtaining and keeping a vacuum. If he would favour your readers with his views, their truth or fallacy would appear, and he might be awarded the praise of having discovered some useful application of atmospheric pressure as a working power; which, in his opinion, scientific men have hitherto singularly overlooked. His statement, as made in your journal of the 16th instant, is too vague to convey an adequate idea of his theory and practice. That he should divulge this is the more important inasmuch as he conceives he has already been anticipated by another party abroad, and I may mention that a party in Ireland has patented and made considerable progress in the construction of an engine to be worked on some system of a perpetual vacuum, as I am informed."

WHITWORTH'S STREET-SWEEPING MACHINE.—The inventor, Mr. Whitworth, in a "general summary of the advantages machine-sweeping possesses over hand-sweeping," thus contrasts the two systems:—"By hand-sweeping, the dirt has to be gathered together by one operation, and the carts loaded by another; the machines load and sweep at one operation: in hand-sweeping, the dirt gathered is liable to be splashed over the street and over the passengers; by the machines, it is at once carried away: heaps of dirt are sometimes left by hand-sweepers at the side of the roads, and become a source of danger, as well as of annoyance, to carriages and foot-passengers; by machine-sweeping this evil is entirely obviated: hand-sweeping obliges the carts to stand in the streets, while being loaded, causing loss of time and obstruction of the traffic; the machines load as they sweep, passing along at the rate of a common cart: the cleanliness of a town cannot be greatly increased by hand-sweepers without great increase of cost; the economy of machine-sweeping increases in proportion to the cleanliness produced: hand sweepers cannot easily and cheaply be increased, according to the exigencies of cleansing; an extra number of machines can be kept ready for emergencies, with little trouble or cost: hand-cleansing has but little tendency to improve and consolidate the road; machine-sweeping tends powerfully to remove ridges and improve the surface: the continuance of hand-sweeping tends to perpetuate a degraded and ill-paid class of labourers, whom the introduction of the machine will elevate, or supersede by better paid and better conducted men, who must be employed to manage the machines. All these advantages are obtained, together with greatly-increased cleanliness."

ANOTHER MARY OF GUELDRES.—The Edinburgh antiquaries have been thrown into a state of excitement by the discovery of another female skeleton in a leaden coffin under the site of Trinity College Church. Professor Simpson is likely, it appears, to decide the question of identity even at this rather late inquest, having pointed out marked evidence of cerebral disease. Professor Goodsir, too, has since, it is said, traced out the evidence of congenital malformation in the head; and the two professors are likely to be thus able to prove the total incapability of the ancient tenant of this mouldering tabernacle to display such character or conduct as that ascribed to Queen Mary of Gueldres.

BRADFORD MECHANICS' INSTITUTE.—The annual distribution of prizes was awarded on Tuesday week in the Athenæum of the Institute; the Rev. Dr. Acworth, president, in the chair; when a series of books were distributed as prizes to successful competitors in drawing as well as other branches of ordinary school education. The formation of classes for the study of chemistry and natural philosophy in general was resolved on.

FIRING SHELLS BY ELECTRICITY.—Experiments were some time since announced from America, which were said to have gone far to establish the practicability of this novel operation, and to teach us that there is no end to the unlooked-for and unlikely adaptations of even now it might be thought pretty well exhausted, or at least familiarized discoveries in science, such as that for which a Franklin has already done so much honour to the land of which he was a denizen. Renewed experiments by the inventor, Lieut. Moor, of the United States' Navy, have been gone into, which, according to an American authority, have removed all doubts. The loaded shell is prepared with the end of a coil of wire attached to it, which, on being discharged from the mortar, it carries out with it like the string of a kite. The near end of the coil is free to be taken to a galvanic battery at any moment during the flight. It is a species of electro-magnetic telegraph applied to the flying shell, which it overtakes and explodes at any moment with the rapidity of thought.

THE SPIRE OF ST. MARY'S CHURCH, SNETTISHAM, NORFOLK.—A correspondent informs us that the lofty stone spire of this church, which, on account of its towering eminence, is used by mariners as a sea mark, being 105 feet in height, and together with the church reaching an altitude of 177 feet, has recently undergone a careful restoration, and the upper part to the extent of several feet has been entirely reset, and an iron cross and weather-cock raised on its summit. Crosses have also been added over the gables of each of the spire windows. These designs were furnished by Mr. H. L. S. Le Strange, and the mason's work has been executed by Mr. William Brown, of Lynn. To raise the scaffolding Mr. Brown availed himself of the openings formed by the upper windows of the spire, which are about 30 feet below the summit: through these he passed, at right angles, boards of such a length as to leave the ends projecting—these were secured at the centre and formed a cross: from the projecting ends he carried a gallery round with a hand rail—the whole forming a light and secure stage, of simple materials, and at a small expense.

CAXTON MONUMENT.—Sir: There are several reasons for the interest falling off on the above subject; one of which is the not determining on a proper place for it, as the former situation is wanted for the Westminster improvements, and cannot be kept vacant for an uncertainty. This being the case, I would suggest the site of the three houses in Poet's Corner, as, from old associations, being every way applicable, as well as being ornamental to the neighbourhood, and consistent with the alterations about to be carried on near there also; and I have no doubt this would meet with the approbation of the dean and chapter of Westminster. My reason for addressing you is because you seem to be nearly the only one that takes any interest in the matter. M. P. VITRUVIUS.

TENDERS

For six houses to be built at Lewisham, for Messrs. Aird and Quick. Messrs. W. Smith and Sons, Architects, Greenwich.

Hill	£5,870
Howard	5,143
Harnden	5,140
Rider	5,130
Goodwin	4,890
Paull	4,877
Cooper and Davis	4,875
Taylor	4,797
Coleman	4,771

For new Warehouses at Camden-town Glass Works, for Messrs. Chance, Brothers, and Co. Mr. W. Hambley, architect.

Thompson	£4,890
Lawrence and Son	4,768
Curtis	4,694
Trego	4,648
Jay	4,587
Locke and Nesham	4,458
Grimsdell	4,293
Burton	4,191
Glenn	3,964
Frasi	3,650

For the erection of Alms Houses, &c., Wellclose-square, Whitechapel, for Mr. Joel Emanuel. Mr. Moffatt, architect.

Jay	£2,616	0	0
Glenn	2,462	0	0
Bridger and Co.	2,265	0	0
Myers	2,262	2	6
Patrick	2,243	0	0
Smith	2,238	0	0
Howard	2,215	0	0
Goodwin	2,137	0	0
H. W. Cooper	1,987	0	0

TO CORRESPONDENTS.

Correspondents must excuse us till next week.

ADVERTISEMENTS.

CAMDEN TOWN.—R. FULKES'S RANGE and STOVE MANUFACTORY, 21, Park-street.
Elliptic Stoves, 3d. per inch. Register Stoves, 6d. per inch.
Self-acting Ranges, with Oven and Boiler and Revolving Shelves, 3 ft., 30s.; 3 ft. 6 in., 60s.
Coppers, 1s. 2d. per lb. Sash-weights, 6s. 6d. per cwt.
Clasp Nails, 13s. 6d. per cwt. Lath ditto, 9s. 6d. per cwt.
Builders' Ironmongery of all descriptions equally low.

OLD-ESTABLISHED WHOLESALE IRONMONGERY WAREHOUSE, Kitchen-range, and Stove-grate Manufactory 18, Cross-street, Walworth.
JOHN GRICE most respectfully solicits the attention of Architects, Builders, and Carpenters, to his Stock of Black and Bright Stoves, Kitchen Ranges, &c., &c.
Black Registers, from 6½d. per in. and upwards.
Bright ditto with Black and Bright Bars, 2l. 10s. and upwards.
Self-acting Kitchen Ranges, with Oven and Back Boiler, Wrought Bars, Fittings Bright:—

3 ft.	3 ft. 6 in.	4 ft.
2l. 3s.	2l. 14s.	4l. 4s.

All articles made on the premises and warranted, and delivered free of expense within five miles of London. Bell-hanging in superior style, hung in secret, 9s. per pull.

TO ARCHITECTS, BUILDERS, &c.
R. HENLY and Co., WHOLESALE IRONMONGERS, and Manufacturers of KITCHEN-RANGES, STOVES, &c., 196, Blackfriars-road, and 117, Union-street, Borough.
Strong Self-acting Kitchen Ranges, with Back Boiler and Oven, and Wrought Bars:—

3 ft.	3 ft. 3 in.	3 ft. 6 in.	3 ft. 9 in.	4 ft.
£3. 6s.	£3. 12s.	£3. 16s.	£4.	£4. 7s.

Henly's Patent Improved, with back Boiler and Wrought Iron Oven:—

3 ft.	3 ft. 3 in.	3 ft. 6 in.	3 ft. 9 in.	4 ft.
£5.	£5. 15s.	£6. 5s.	£6. 10s.	£7.

Best Register Stoves, at 7d., 8d., and 9d. per inch.
Do. Elliptic do., at 3½d., and 4d. do.
Manufacturer of WOLFANTON'S PATENT REGISTER STOVES, a certain cure for SMOKY CHIMNEYS, and effecting a great saving in fuel. To be seen in use daily.
Orders from the Country, accompanied with a remittance or reference, will meet with prompt attention.

TO BUILDERS and CARPENTERS.—Elliptic Stoves, double backs, 3d. per inch. Registers, 6½d 7d., 8d. per inch.
Cottage Ranges, with Ovens and Boilers, 3 ft. 2 in., 40s.; 3 ft. 4 in 42s.; 3 ft. 6 in., 44s.
Self-acting Ranges, with Circular Oven and Back Boiler, best Wrought Bars and Bright Fittings,
3 ft., £3. 3s. 3 ft. 6, £3. 12s. 6d. 4 ft., £4.
Best Patent Cut Clasp.

4½d.	5d.	7d.	10d.	1s. 2d.	1s. 8d. per 1,000.
8d.	9d.	6d.	8d.	10d.	20d.

Best Sheet Floor Brads 13s. per cwt.
Best Town Glue 35s. Do. Scotch, 52s. per cwt.
Best Patent Sash Line.

4s. 3d.	5s.	6s. 6d.	7s. 6d.	10s.	13s. per gross.
1	2	3	4	5	6

At P. R. WILLIAMSON'S IRONMONGERY and STOVE WAREHOUSE, 35, Chiswell-street, Finsbury-square.
Lists of Prices had on application at the Warehouse, or by letter pre-paid, inclosing postage stamp.
N.B Warehouse closes at Seven o'clock.

NOTT'S PATENT STOVES, for warming Churches, Chapels, Shops, Warehouses, &c.—Architects, Builders, and Ironmongers are informed that the manufactory is REMOVED from Great Queen-street to Messrs. Benham and Sons, Wigmore-street, Cavendish-square, where there is also a large assortment of other Warm Air Stoves, and a very extensive variety of fashionable Stove Grates, Fenders, and Fire-irons.—N.B. Churches, Conservatories, and other Buildings warmed by hot water.

BURBIDGE and HEALY, 130, FLEET-STREET, LONDON, beg respectfully to inform the Building Public that they fit up COOKING ARRANGEMENTS for large Mansions, with patent appliances on scientific principles, which ensure greater economy and efficiency than hitherto attained. Also HOT WATER APPARATUS, upon improved and scientific principles, which they recommend for its peculiar safety for the Warming of Mansions, &c.
They fit up Laundries with Hot Water Apparatus, for Drying in a cleanly, expeditious, and safe manner. They also fit up BATHS with elegant arrangements, with every modern scientific improvement. Also Apparatus for the plentiful supply of Hot Water for Baths and general use of Mansions and large establishments.

TO ARCHITECTS AND BUILDERS.
CHUBB'S WROUGHT-IRON and FIRE-PROOF DOORS and FRAMES, for strong Rooms. A large stock of the above, of all sizes, made in the best manner, and of different strengths, fitted with CHUBB'S PATENT DETECTOR LOCKS, throwing from two to twenty bolts, constantly on sale, at very moderate prices. FIRE-PROOF SAFES of every size, and Patent Detector Locks and Latches for all purposes.—C. CHUBB and SON, sole Manufacturers, 57, St. Paul's Churchyard, London.

TO ARCHITECTS, BUILDERS, &c.
COPPER-WIRE CORD.—R. S. NEWALL and Co.'s PATENT IMPROVED COPPER-WIRE CORD for WINDOW SASH LINES, Hot-houses, Lightning Conductors, Hanging Pictures, Clock Cord, and various other purposes for which hempen rope has hitherto been used. This new and valuable Patent is fast superseding the use of the hempen cord, and is strongly recommended to all builders and other parties connected with the above. The Wire Cord may be had wholesale, and specimens seen at the office of the Patentees, No. 163, Fenchurch-street, W. F. ALLEN, Agent; or retail of G. and J. DEANE, 46, King William-street; E. PARKS, 149, Fleet-street; T. JONES, 62, Charing Cross, and GIBBONS and CO., 345, Oxford-street; also of all respectable Ironmongers.

GALVANIZED IRON FOR ROOFING, &c.—The Galvanized Iron Company beg to direct the attention of architects, surveyors, builders, and others, to their Patent Galvanized Iron, which is peculiarly adapted for ROOFING and BUILDING PURPOSES, especially for Tropical climates, being cheaper and more durable than zinc, lead, tin, or any other metal, calculating weight and strength. This fire-proof material has been used for roofing the new Houses of Parliament, ship-building and timber sheds in her Majesty's dock-yards of Deptford, Woolwich, Chatham, and Portsmouth; and at many of the principal Railway stations, gas works, &c. &c. This material is also admirably adapted for the construction of conservatories, fire-proof buildings, chain and wire rope bridges, corrugated doors, shutters, &c. &c. Specimens may be seen, and every information obtained at the Offices of the Company, No. 3, Mansion House Place, City—London. Works at Millwall, Poplar, Middlesex; Broad-street, Birmingham; Cobyn's Hall, near Dudley.

LIGHTNING CONDUCTORS for BUILDINGS.—SMITH'S PATENT COPPER WIRE ROPE is being daily employed for the protection of CHURCHES and other buildings from the effects of thunder-storms. It possesses important advantages over other forms of conductors. References can be given where it has been applied for some time past to CHURCHES, PUBLIC and PRIVATE BUILDINGS, &c. &c. Its general adoption in the Naval and Mercantile Marine of this and other countries is the strongest possible EVIDENCE of its EFFICIENCY, &c.
SMITH and ENGLISH beg the attention of those engaged in building to their IMPROVED PATENT PANELLED and REVOLVING IRON SHUTTERS.—Also, the Patent Weathertight Fastening and Cill Bar, for French Casements, which are so much admired for their security, simplicity, cheapness, and efficiency. Of the merits of their
Patent Double and Single Action Door Springs,
Improved Flooring Cramps,
Patent Wire Sash Lines, &c. &c.,
little need be said, as they are pretty generally known and appreciated.
Manufactory for Iron Suspension, Sliding, and other Doors, Strong Rooms, Plain and Ornamental Palisading, Gates, and Columns.—Also, Metal Sashes, Shop-fronts, Stall-board Plates, Brass, Butt, and other Hinges. Buildings heated upon a new, safe, and superior plan.
Estimates given for every description of Metal-work.
SMITH and ENGLISH 69, Princes-street, Leicester-square, London.

REDUCED PRICES.

WILLIAM CLEAVE, of Wilton-road, Pimlico Basin, begs to acquaint Builders and the Trade that he has now on hand, at his Manufactory (the first of its kind ever established), a very large Assortment of Dry and Well-seasoned FLOORING BOARDS and MATCH BOARDING of all sorts, from ¾ inch to 1¼ inch thick, planed to a parallel width and thickness, and at greatly Reduced Prices. Also, Timber, Deals, Oak Planks, Scantlings, Sash Sills, Moulding prepared by Machinery, Laths, &c.

Apply at W. CLEAVE'S Flooring Manufactory and Timber Yard, Wilton-road, Pimlico Basin, late C. MOORE and SON.

A REDUCTION in the PRICE of FLOOR BOARDS.—ALFRED ROSLING begs to inform the Trade and Consumers generally, that he has REDUCED the PRICE, and keeps constantly in stock a large and very general assortment of Prepared Floor Boards and Matched Boarding, lined to a parallel breadth and thickness, and fit for immediate use; also a variety of machine-prepared Mouldings, which are finished with great accuracy and attention to quality of workmanship.—Southwark Bridge Wharf, Bankside, and Old Barge Wharf, Upper Ground-street, Blackfriars.

T. ADAMS (late S. DARE), MAHOGANY and TIMBER MERCHANT, Bermondsey New Road, near the Bricklayers' Arms. SEASONED FLOORING, MATCH-BOARDING FIT FOR IMMEDIATE USE, and MOULDINGS prepared by machinery. Cut Deals and Scantling of every dimension, Mahogany, Cedar, Rosewood, Wainscot, Elm, Beech, Oak, &c., in planks, boards, veneers, and logs; Pantile, Oak, and Fir Laths; Wheelwrights' Goods. All sawn and prepared goods delivered free of expense (except timber). Sawing charged at mill prices. Very extensive Drying Sheds.

MAHOGANY.—Twenty Thousand Pounds' worth of dry HONDURAS and SPANISH MAHOGANY and WAINSCOT always on hand, suitable for Builders, Pianoforte Manufacturers, Cabinet and Coachmakers, Railway Contractors, and all persons requiring well-seasoned materials at moderate prices, at T. C. WILSON'S Timber-Yard, 13, Greek-street, Soho.—T. C. WILSON adopts this mode of informing the public where they can procure dry and superior articles, in consequence of the numerous complaints of parties having bought wood elsewhere as seasoned, where upon working the same it has proved otherwise.

MUIRS PATENT PLANING MACHINE.

SAW MILLS, GILLINGHAM-STREET, PIMLICO.

TIMBER of any size, PLANK, DEALS, and BATTENS, &c., Sawn on the most approved principle. Boards, &c., Prepared, Matched, and Grooved, by Muir's Patent Machinery. The Mills have all the advantages of navigation and water-carriage, being connected with the Thames by the Grosvenor Canal. Goods fetched from the docks and carted home free of charge.

Address to HENRY SOUTHAM,
Saw Mills,
Gillingham-street, Pimlico.

N.B. Estimates given for Sawing and Planing.

WOOD THOROUGHLY SEASONED in DAYS instead of YEARS, by DAVISON and SYMINGTON'S PATENTED PROCESS, at the Patent Desiccating Company's Establishment (for Seasoning, Sawing, and Planing Wood), at the Grand Surrey Mills, immediately adjoining the Commercial and East Country Docks, Rotherhithe. The new process ensures the entire removal of moisture, hardens the gums, prevents further shrinkage, and strengthens the fibre.—For scale of prices, or license to work the patent, or any further information, address, post-paid, or apply to ANGUS JENNINGS, Secretary.

The Patent Desiccating Company's Offices are REMOVED from 28, New Broad-street to No. 41, GRACECHURCH-STREET, CITY.

TIMBER-PRESERVING COMPANY.— (PAYNE'S PATENTS for the PRESERVATION of TIMBER AGAINST DRY ROT, FIRE, RAVAGES of WORMS, &c.)—The above Company are ready to enter into arrangements for the Preparation of Timber at any of their undermentioned stations, viz.:—

Whitehall Wharf, Westminster,	Lynn,
Fleetwood-on-Wyre,	Staines,
Wisbech,	Guildford,
Gateshead,	Southampton,
Barnstaple,	Hartlepool,
Leicester,	Darlington;

and they will erect the necessary apparatus wherever there is a considerable quantity of timber to be prepared.—Further particulars, with prices, may be obtained at the London Works, Whitehall Wharf, Cannon-row, Westminster.

MESSRS. WOOD & Co., DECORATIVE ARTISTS, SIGN and GLASS WRITERS, GRAINERS, HOUSE PAINTERS, and GENERAL CONTRACTORS for REPAIRS, &c. &c.

70, York-road, Lambeth; and 23, Cross-street, Blackfriars-road.

SNOXELL'S PATENT SAFETY REVOLVING WOOD SHUTTERS, Manufactory, 96, REGENT-STREET and 121, CHANCERY-LANE. Patent sealed on the 4th day of February, 1845, for Fourteen Years, for Improvements in Revolving Shutters of WOOD and IRON, consisting of Six Methods of Raising and Lowering Shutters, without Machinery, and Two for Hinging and Sheathing the Edges of Wood Laths with Iron.—The Patentee having fixed up some hundreds, will feel pleased in forwarding the Testimonials of Architects, Principals of large Establishments, and others, having them now in use, which fully guarantees the Patentee in stating they are beyond dispute superior to any other Revolving Shutter for durability, security, and simplicity, without the use of cog-wheel worm and screw gear, or any other complicated machinery employed by other makers.

THE PATENT CONVEX REVOLVING IRON SHUTTERS are cheaper, twelve times stronger, work easier, cannot run down, and roll up in one-third less room than any other shutters made.

HARCOURT QUINCEY, PATENTEE.

CLARK and Co., Sole Manufacturers, and of improved drawn ornamental metallic sash bars, astragals, mouldings, stall-board plates, &c. &c., in brass, copper, and zinc. Wrought iron girders, hot water apparatus, and metal works of every description connected with buildings. Steam engines, millwork, and machinery. CLARK and Co., Engineers, 238, Wapping. Models can be seen and every information obtained at 456, Oxford-street, and 4, Moorgate-street, City. Agent for Scotland, Mr. G. BRIGSTOCK, 17, George-street, Edinburgh.

BUNNETT and CORPE, ENGINEERS,
Patentees of
REVOLVING IRON AND WOOD SAFETY SHUTTERS,
and of
ORNAMENTAL METALLIC SASH BARS, MOULDINGS, &c.,
IN BRASS, COPPER, ZINC, &c.
FOR SHOP-FRONTS, SKYLIGHTS, &c.

Shop-fronts completely fitted and fixed in a superior style, either plain or ornamental, also glazed with best plate glass. Strong moulded stallboards handsomely engraved. Metal works and machinery of all kinds in connection with banking-houses, shops, warehouses, &c. &c.

B. and C. challenge competition as to either quality or price.

Designs furnished and estimates given.

IMPROVED PATENT BENCH AND FLOORING CRAMPS FOR BUILDERS.

SOLE LICENCEES FOR MARVIN and MOORE'S PATENT DIAGONAL GRATINGS.

Office of the Patentees, 26, Lombard-street, London; and at the Works, Deptford, Kent.

STIRLING'S BELVEDERE SLATE WORKS, Belvedere-road, Lambeth.—A reduced list of prices of the best WELCH SLATE SLABS, planed both faces, will be sent on application (post paid) being made, and inclosing a postage stamp. The prices are under those advertised for inferior slates.

SLATE SLABS, of the finest quality, planed on both sides, at reduced prices, may be had of Messrs. JONES, Bangor Wharf, Pimlico, and 18 Wharf, Macclesfield-street, City-road Basin. Enamelled Chimney Pieces, in superior style, Washhand-stand and Table-tops, &c., are in daily production at the above places. A large assortment of best Bangor Roofing Slates are constantly kept on hand, at prices considerably reduced.

WELSH SLATE SLABS of the Finest Description, and planed both faces, supplied to the Trade at the same prices that rough (self-faced) Slabs are being sold at the principal Slate Wharfs in town. A large discount is also allowed, or, in lieu of discount, parties ordering 150 feet and upwards may, if they prefer it, have the Slabs delivered, carriage free, to any canal or railway point within fifty miles of London.

N.B. Whole cargoes direct from the Quarries. Enamelled Slate Chimney-pieces, Slabs, Mural Tablets, Baths, Fonts, &c. &c.

Address, Mr. MAGNUS, Pimlico Slate Works, Upper Belgrave-place.

ANSTONE STONE WHARF, STANGATE.—Mr. GRISSELL has the honour to inform Architects and Builders that he has made arrangements for the SUPPLY of the ANSTONE STONE for all building purposes, and which can now be seen at the above wharf by application to Mr. W. G. WARDLE, of whom every necessary information can be obtained.

August 30, 1848.

ANSTON STONE, used for Building the New Houses of Parliament.—W. WRIGHT and Co. beg to inform Architects, Engineers, Builders, and others, the Anston Stone can be supplied in any quantity on the shortest notice. This valuable stone, so celebrated for its durability, colour, and texture, is well known, having been selected in preference to all others, by the Commissioners of Woods and Forests, for building the New Houses of Parliament. It is very superior for Monuments, Tombs, &c. &c.

W. WRIGHT and Co. deem it important to state the Anston Stone offered by them is from the same bed as that from which the New Houses of Parliament are being constructed, a hedge alone being the division of the properties of the Duke of Leeds and W. Wright and Co.

Facilities are at hand for forwarding it to all parts of the Kingdom.—Application to be made to W. WRIGHT and Co., Anston, near Sheffield, Yorkshire.

CAEN STONE.—Original Sufferance Depôt, Norway Wharf, Greenwich.—W. TUCKWELL, Caen Stone Quarry Proprietor and Importer, begs to invite the attention of Architects, Surveyors, Builders, and others to the Stock of CAEN STONE on his Wharf; he is prepared by constant arrivals to execute orders to any extent on the most advantageous terms.—Shipments made to any port direct from his quarries at Caen.

N.B. Orders received at the Wharf, as above; also at the Offices of Mr. R. A. WITHALL, Surveyor, 80, Cheapside, where further information and samples may be obtained.

CAEN STONE, from the first Quarries of Allemagne. Depôt at the Whithy and Scotch Wharf, 14, Fore-street, Limehouse

P. FOUCARD, quai des Abattoirs Caen (propriétaire de Carrières à Allemagne), begs leave to inform Builders, Architects, and others, that he has, on the above-mentioned wharf, 50,000 feet of the best stone ready to meet the demands of purchasers.—Contracts taken for any quantities.

Orders received by Mr. BASCHET, at 39, Stoney-street, Borough Market.—Cargoes shipped to order, from Caen, to any port.

CAEN and AUBIGNY STONE.— LUARD, BEEDHAM, and Co., Proprietors of extensive Quarries of best Caen Stone at Allemagne, and Aubigny Quarries, near Falaise, Normandy, beg respectfully to invite attention of Archæologists, Architects, Engineers, Surveyors, Builders, and others to the above. Caen Stone is too well known to need special notice. Aubigny Stone, from its fineness of grain, hardness of texture, beauty of colour, freedom from vents, shell, and great durability, ranks amongst the first for building and engineering purposes, hall paving, staircases, sculpture, tombs, cemetery works, and general masonry. L. B. and Co. have for many years supplied large quantities to various parts of the continent for public works, light-houses, &c., under the patronage of the Royal Engineers. Orders executed to all parts of the United Kingdom with despatch direct from the quarries. A large stock of seasoned Caen and Aubigny Stone always on hand, at Caen Sufferance Wharf, Rotherhithe, where samples and information may be obtained.—Office, 18, Southwark-square, Southwark-bridge-road, Southwark.

CARLISLE MARBLE WORKS.—The above Works have been established nearly Twenty Years, and have lately been fitted up in a superior manner, with all the latest improvements for working and polishing Marble by machinery. Architects and Builders requiring large orders executed will find a great saving, both in cost and time, by intrusting their orders to this establishment. Experienced workmen sent to any part of the kingdom, to fix work at a reasonable rate.

THOMAS and JAMES NELSON, Proprietors.

SAMUEL CUNDY, Mason and Builder, PIMLICO MARBLE and STONE WORKS, Belgrave Wharf, Pimlico, begs to inform Architects and the Public that MASONS' WORK, in all its branches, is executed on the most reasonable terms, in such manner as must meet the views of his Patrons.

GOTHIC WINDOWS and the more elaborate Works produced at a reduced cost, on a system that combines economy with the required accuracy and truthfulness.

FONTS from 5l. upwards.

MONUMENTS and TOMBS in great variety of design.

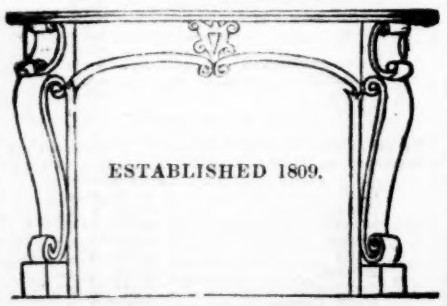
The most varied Assortment of ORNAMENTAL, PLAIN, and ENCAUSTIC TILES, in Town, on view.

Stone-box Chimney-pieces, from ..... 12s.
Vein-Marble " " ..... 40s.

RESTORATIONS Estimated for (in which Branch S. C. has had considerable practice). Dairies fitted up, &c. &c.

Goods Landed, Housed, and Delivered.

BUILDERS, MASONS, &c., will find a considerable reduction in the price of Marble Work, at the WESTMINSTER MARBLE WORKS, from the great improvements made in Working and Polishing Marble by Patent Machinery. All orders are executed in a style entirely unequalled.



The business of this establishment is so arranged as to be a great advantage to the trade, from the great variety of Chimney-pieces and Monuments always on view, and sold at a very low charge; also the liberal commission always allowed to the trade.

Westminster Marble Company, Earl-street, Millbank.

WILLINGTON STONE WHARF, Augustus-street, Regent's-park.—Messrs. WOMERSLEY and FARRAR most respectfully beg leave to inform their friends, and the public in general, that they have opened the above Wharf, lately held by Mr. John Booth, with a very superior stock of Park spring-sawn Slab and Landings; also of every description of Yorkshire Landings. Steps, Links, Coping, &c., on the most moderate terms.

PAVING, 2s. 9d. PER SQUARE YARD, Basements, Foot-walks, Malt-houses, Corn Stores, Floors of Warehouses, and every description of Pavement laid down at the above low price, and the work guaranteed.—Apply to JOHN PILKINGTON, POLONCEAU'S BITUMEN PAVEMENT OFFICE, 15, WHARF-ROAD, CITY-ROAD.—N.B. Country Agents and Railway Engineers and Contractors supplied with the best bitumen for covering bridges and arches.

PATENT METALLIC LAVA, WHITE AND ORNAMENTAL, for the interior of Churches, Museums, Halls, Vestibules, Conservatories, &c. &c.; BROWN, for Foot Pavement, Flooring, covering Railway Arches, Terraces, Roofs, &c. &c.—Manufactured only by Messrs. ORSI and ARMANI.—Specimens and list of prices can be obtained at the offices, 6, Guildhall Chambers, Basinghall-street, City.

TERRA-COTTA, or VITRIFIED STONE WORKS, King Edward-street, Westminster-road, London.—M. H. BLANCHARD, from late Coade's Original Works, Belvedere-road, Lambeth, begs to inform the Nobility, Gentry, Architects, and Builders, that he has re-established the manufacture of that invaluable material, which has been successfully adopted by our eminent Architects and others, in the adornment of our noblest buildings, nearly 100 years has proved the imperishable nature of the material, the specimens of those times now exhibiting all their primitive sharpness.

Groups, statues, friezes, capitals, panelling, pinnacles, finials, terminals, Tudor, and other chimney shafts, balustrading, fountains, fonts, taxzas, vases, coats of arms, devises, and every description of architectural ornament, at prices in many instances nearly half the cost of stone.

Specimens of the material to be seen at the Office of "The Builder," 2, York-street, Covent Garden, and at the Works.

CHEAP ORNAMENTAL GLASS.—I beg to inform my friends and the public, that I have now completed a new ENGINE, and, owing to the facility with which I can execute orders, I am enabled to reduce my former prices considerably. The prices are now from ONE SHILLING PER FOOT SUP., and borders from SIXPENCE PER FOOT RUN. A large quantity of the cheapest patterns always in stock. Embossing and painted work on the most moderate terms.—CHARLES LONG, No. 1, King-street, Baker-street, Portman-square.—Cash only.

E. & W. H. JACKSON beg to call the attention of builders to the reduced prices of their PATENT PLATE GLASS, which, from its cheapness, is now superseding Crown in all respectable dwelling-houses. BRITISH and ROUGH PLATE, CROWN, SHEET, and ORNAMENTAL GLASS supplied at the lowest terms.—Lists of prices, and every information, can be had on application at their warehouse, 315, Oxford-street.

WINDOW GLASS.—THOMAS MIL- LINGTON begs to inform the Trade and Consumers that he has a large Stock of Sheet-Glass on hand, which he will supply in 200-feet cases, delivered free in London for 42s. 6d. per case, or cut to size, 3d. per foot.—Address, 87, Bishopsgate-street-without.

WINDOW-GLASS, VARNISH- COLOURS, and PLUMBERS' BRASS-WORK.

THOS. MILLINGTON, 87, Bishopsgate-street Without, London, begs to inform the Trade, and consumers generally, that he is supplying the above articles of the best materials and upon the lowest terms for cash.

CROWN, SHEET, and PLATE GLASS, in any quantity; VARNISH: fine Oak or Wainscot, 10s; Carriage, 12s. per gallon; White Lead, 27s., and Colours and Brushes; Water Closets complete, 30s.; Lifting Pumps and Cocks of every description.

Milk Pans; Propagating, Bee, and Cucumber Glasses; Paper hangings from 1s. per piece upwards, of very superior description.

SOHO PLATE GLASS COMPANY, CROWN, SHEET, PATENT PLATE and ORNAMENTAL GLASS MANUFACTURERS.—ALFRED GOSLETT begs to call the attention of Builders and the Trade to the following quotations:—

Thirds Crown, per crate 18 tables	£3	2	6
Fourths " " "	2	7	10
C C " " "	2	1	0
C C C " " "	1	18	0

Horticultural, 15 oz. sheet, per crate, 2½d. per foot.
Fourths, ditto ditto 2¾d. "
Horticultural, 16 oz. ditto, ditto 2½d. "
Fourths, ditto ditto 3d. "
Horticultural, 21 oz. ditto, ditto 4d. "
Fourths, ditto ditto 5d. "
Ditto, 26 oz. ditto, ditto 6½d. "
Ditto, 32 oz. ditto, ditto 8d. "

Ornamental Glass of very superior patterns, from 1s. 2d. per super. foot, cut to order; or 1s. in stock sizes. A separate tariff for Patent Plate at the lately reduced prices, will be forwarded upon application.

Plate Glass, for glazing purposes, at very reduced prices. Rough Plate ⅜, ½, ⅝, and ¾ inch thick.

CHAS. WM. WATERLOW,
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of Sashes and Frames, and Joiner to the Trade, 121, Bunhill-row, Finsbury-square.—Well-seasoned materials, superior workmanship, lowest prices.—Upwards of 400 DOORS, and a large variety of Sashes and Frames, always on sale. Glazed goods securely packed for the country. Steam-struck Mouldings in any quantity.—N.B. This Establishment is worth the notice of all engaged in building.

SHOP FRONTS, SASHES AND FRAMES, DOORS, &c. MADE FOR THE TRADE.

JOHNSON and PASK,
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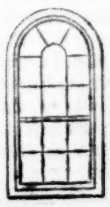
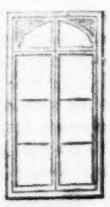


Beg to inform the Trade, and the Building Public in general, that they continue to manufacture Sashes and Frames, Shop Fronts, Doors, and all other kinds of Joiners' work, on the lowest possible scale of prices. All kinds of Wainscot and Mahogany work done in the very best manner; French polished, and carefully packed for the country.—A full list of prices forwarded by return of post, to any part of the country.



TO BRICKMAKERS, POTTERS, AND LIMEBURNERS.

SWAIN'S PATENT KILN.—The attention of the above is drawn to a most valuable Invention in the manufacture of Bricks, Drain Tiles, and all kinds of Pottery, consisting of a Kiln, constructed on Scientific Principles, to burn with one-third the quantity of Coals at present required, and also in a third the usual time, thereby enabling the Manufacturer, from the great saving of both Fuel and Labour, to supply to the Consumer at a considerably Reduced Price, and realise a Larger Profit himself.—Particulars may be obtained by application to Mr. CHARLES J. BAKER, 18, Lower Brook-street, Grosvenor-square, London; or to the Patentee, W. SWAIN, Brickmaker, Westonbury, near Leominster, Herefordshire, where a Kiln can be seen in operation.